Gleanings in Bee Culture

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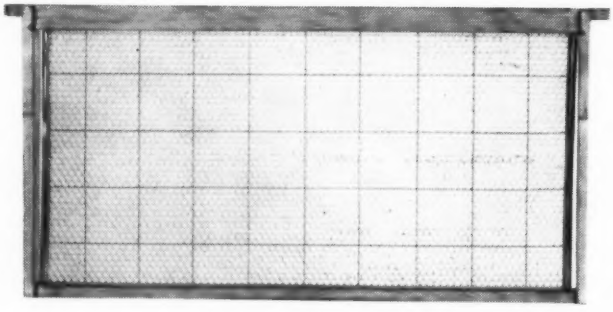

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Gleanings in Bee Culture

November, 1959 Vol. 87, No. 11

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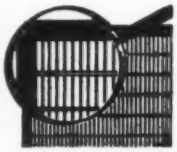

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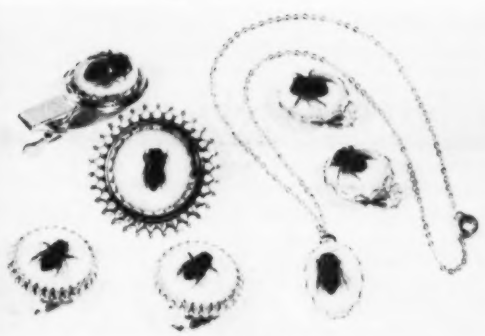

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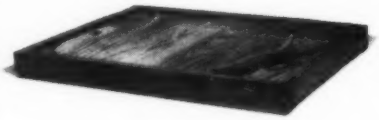

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Monthly HONEY Report

WALTER BARTH, Field Editor, San Antonio, Texas

HATS ARE OFF to the Sioux Bee Association for their plans to help our industry move dark honey. Their new product, called SIOUX BEE SYRUP, contains processed honey, corn and cane syrups, artificial maple and walnut flavor, and caramel. The maple, walnut and caramel are reportedly to mask some of the stronger honeys. After tasting a sample myself, I am sure consumers will really go for Sioux Bee Syrup. Sure is a tasty treat for pancakes and waffles.

After new products comes honey advertising, and this time the limelight is on Bradshaw's Honey from Wendell, Idaho. Bradshaw is using the premium plan to stimulate honey sales. One lid from a jar or cup, or a metal key open band from a tin, plus $6.95 will bring a $12.00 value honey bear to the consumer. Here is a perfect birthday or Christmas gift or party favor. Let's hope this premium plan moves honey. (Our thanks to R. H. Irwin, Woodward, Oklahoma, for sending us the information and illustrations on this offer.)

As beekeepers we all are interested in the new 1959 Yearbook of Agriculture titled FOOD. This book is a "must" in any beekeeper's library. Its 65 chapters and 736 pages tell much of what 72 nutrition experts in the USDA, and other Federal agencies, and 12 colleges know about food energy, vitamins, proteins, amino acids, fats, carbohydrates, and other food subjects. Readers can secure a free copy by writing a letter to their Congressman requesting a copy. It might be best to mention beekeeping and your interest in honey. The supply of this fine book is limited so be sure to write soon.

Who Owns the Nectar?

As I am being swamped with inquiries concerning an unusual local beekeeping problem outside of marketing, I will digress for a moment to report on the situation, as it will not be possible to answer all of the inquiries personally.

Last year a commercial South Texas beekeeper placed a large yard of bees near a 400 acre tract of clover and paid the farmer $20.00 for the privilege. This spring the beekeeper returned but the farmer wanted a lot more rent. The beekeeper balked and placed his bees on a neighboring farm. As a result the first farmer became angry and has filed suit against farmer No. 2 as he didn't know the name of the beekeeper.

What are the charges? Trespassing and stealing nectar belonging to farmer No. 1. The beekeeper and farmer No. 2 were charged with conspiracy. While the charges appear foolish at first glance, they are very serious. A loss by farmer No. 2 could hurt the beekeeping industry nationally. Press releases on this story are making national newspapers, and considerable interest has developed. Gleanings will be carrying details on this case as it develops. Please refrain from writing directly to me as it will not be possible to answer inquiries. At this point the American Beekeeping Federation, the Texas Beekeepers' Association, the South Texas Beekeeping Hobbyists, and the attorney for the beekeeper are teaming up for a defense.

Generally beekeepers are pleased with their 1959 honey crop. Some areas have really done well as indicated by this report from J. W. Admire in Kansas who reports, "Right in our locality we are securing one of the best crops we have had in years and my bees are still doing well on the third crop of alfalfa". "The honey crop in Pennsylvania is considerably above average and has a fine flavor", says Dr. E. J. Anderson. The West Coast, parts of the Mountain and the Gulf States didn't fare so well, however.

The demand for honey is good. The beeswax market is generally steady with prices at 42¢ per pound in cash and 44¢ per pound in trade. At this point it looks as though the national honey crop will be about ten per cent below normal with about an average wax crop.

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Medina, Ohio

DR. E. J. DYCE
Professor of Apiculture
Cornell, University
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"On opening a colony I was surprised to see little or no propolis. The combs were old yet they were so free of propolis that they appeared almost like new."

Beekeeping in the 50th State

ON OUR WAY to New Zealand and Australia last fall Mrs. Dyce and I spent nearly two weeks in one of our new States, the Hawaiian Islands. While there we had an opportunity to visit some of the honey producers, speak at a meeting of the Oahu Beekeepers' Association in Honolulu, and see some of the beekeeping activities on the Islands of Oahu and Hawaii. We obtained a very favorable impression not only of the climate, but also of the possibilities for honey production.

The Hawaiian Islands lie about 2,000 miles southwest of San Francisco. They have an area of about 6,400 square miles and are almost as far north from the equator as the southern tip of Flori-

Allen P. Luce in one of his apiaries on the Island of Hawaii.

da. The island of Hawaii is the largest of the group. It has an area of about 4,000 square miles, which is about the size of the state of Connecticut.

The island of Oahu, occupies an area of about 600 square miles and is the island most frequently visited mainly because it is the site of the capital (Honolulu), Pearl Harbor, and the world famous Waikiki Beach. The population on the entire chain of Islands is about 500,000 but the island of Oahu with Honolulu supports around four-fifths of the population of the entire islands. The average temperature at Honolulu over the 12 month period varies from about 71 to 79 degrees F. January and February are usually the coolest months and July and August the warmest. The prevailing winds are from the northwest and the greatest rainfall occurs on the windward sides of the Islands and in the mountains. It is not uncommon for over 200 inches of rain to fall in some areas and in other areas there is so little rain it is almost like a desert.

Before leaving for Hawaii, Dr. Henry A. Bess, Senior Entomologist at the University of Hawaii, assisted in arranging our schedule. Mr. Richard F. Bovard, President of the Oahu Beekeepers' Association helped me get a good picture of beekeeping on the island of Oahu and Mr. Allen P. Luce made certain that I missed very little of the beekeeping activities on the island of Hawaii.

Over the years, honey production on the Islands has gone through some unusual and difficult experiences. But in spite of these ups and downs there still appears to be a good future.

Beginning of Beekeeping on the Islands

Beekeeping was started on the Islands about 1875 when some German black bees were imported from California. Around the turn of the century the industry was expanded chiefly by four large commercial companies. Part of this expansion was due to an interest on the part of ranchers in securing more efficient pollination of a leguminous algaroba tree. (**Prosopiis chilensis** Mol. Stuntz) better known on the Islands as keawe.*

Algaroba seed was brought to the Islands from France by Father Bachelot about 1837. In favorable climatic locations, especially on the leeward side of the Islands where the rainfall is

[* Mesquite of Texas also called algaroba.—Ed.]

A Macadamia
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A Macadamia nut plantation showing the young nut trees on the right and Norfolk Island pine trees on the left which are used as a windbreak.

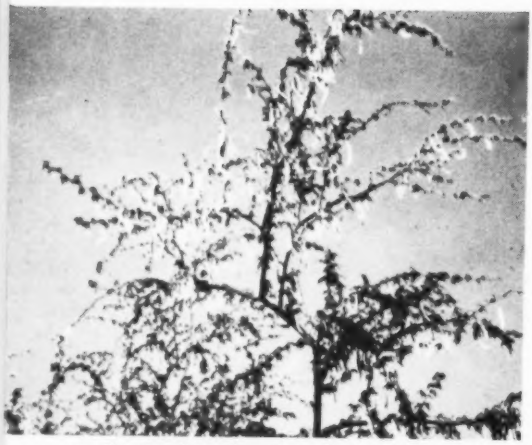
not too heavy, it spread with great rapidity and covered thousands of acres of land. In favorable locations it grows to 30 or more feet in height with a large spread of branches. This leguminous tree produces a large number of rather long, (about eight inches) sticky bean pods which drop to the ground when ripe.

These keawe pods are a source of food for cattle especially during dry summers when there is little else for them to eat. While the pod itself is high in carbohydrates the cattle are unable to digest the seed and when they have been on keawe beans too long a malady which is known as Tongue Out develops. It is caused by a vitamin B deficiency. For this reason many ranchers are in favor of destroying the trees. Keawe trees secrete a great deal of nectar and pollen. Some blossoms may be found on the trees throughout the summer but it usually has two periods of bloom, one in the spring and another in the autumn. The honey from this tree varies from water white to white in color. It is mild in flavor but tends to granulate within three or four weeks after it is stored in the combs, which necessitates rather frequent extractions. It is difficult to keep the honey in liquid form on the store shelves but it lends itself exceedingly well to the finely crystallized or creamed honey pack.

There was little or no increase in the beekeeping activities on the Islands from 1900 until 1916 but when honey prices increased during World War I, honey production expanded considerably. In 1908 when Dr. E. F. Phillips visited the Islands he estimated there were about 20,000 colonies and the export shipments of honey amounted to about 2,000,000 pounds annually.

AFB Reduced Bee Population for a Time

For many years large quantities of honeydew were gatherd by the bees from exudations of the sugar cane leaf hopper but this ceased with the control of the leaf hopper around 1920. This reduction in yield along with a decrease in honey prices following World War I and a serious outbreak of American foulbrood in the early 30's, resulted in a considerable decline in the industry. For a number of years following this discouraging period it appears there were less than 10,000 colonies on the Islands.



The top of an algaroba or keawe tree showing blossoms as well as pods.

One interesting outcome following the spread of American foulbrood on the Islands is that the progeny of many of the colonies that survived on the different Islands appear to exhibit a considerable amount of resistance to this disease. This as well as some other interesting aspects of beekeeping were studied and reported by Dr. J. E. Eckert after he visited the Islands in 1950.

About 1950 considerable interest in beekeeping again took place but in 1953 a very small moth started to attack the algaroba or keawe blossoms. The moth has not been given a common name but it has been identified as Ithome concolorella (chambers). The damage caused by this tiny insect has been so great that many beekeepers find they can no longer count on algaroba as an important source of nectar. Since it would not be economical or practical to spray the vast areas of algaroba, an effort has been made to find an insect or small organism that would attack and eradicate the moth. In 1955 a parasite, Bracon gelechiae (Ashmead) was introduced from Tucson, Arizona, but so far it is doubtful if it plays an important role in the cotrol of the moth.

The loss of algaroba is very discouraging to most beekeepers but not to all of them. For example, Allen Luce who has had a great deal of experience in commercial honey production on the Islands is still quite optimistic. He made a detailed study of new apiary locations on the island of Hawaii. Most of his colonies are now located on the mountain sides where the bees are able to work different types of tropical flora, which grow on the low lands and also the more hardy types on the mountain slopes. The major source of nectar is from ohia lehua which is especially high in quality and the secondary sources are from ilima, eucalyptus, mamani, coffee and silver oak. This effort paid off as he secured an average of about 120 pounds of good honey per colony during the season of 1957 as well as 1958.

Much of the soil, especially on the island of Hawaii is relatively new but it varies all the way from old weathered soil to fresh lava flows. Even birdfoot trefoil will soon start to grow among the volcanic cinders. One coffee grower on new soil near Hilo is using trefoil between his trees to keep down the weeds. It formed a complete thick mat or carpet over the cinders and he was delighted with the results. One objection to new volcanic soil is that the cinders are very hard on shoes. After visiting a few apiaries I noticed my shoes were badly scuffed.

In addition to honey production Allen Luce is very interested in the pollination of coffee and Macadamia trees. The latter which were imported from Australia yield a round very delicious nut, about one inch in diameter. The nut has a very hard shell which requires special machinery to crack it. Enough of these nuts to fill a standard one pound honey jar sells for about $1.35. To me the nut tastes somewhat like a mixture of cashews and peanuts. The use of honeybees for pollination appears to improve the quality and quantity of the crop. Mr. Luce took me down to see a plantation of about 1,000 acres in which he had some colonies.

Very Little Propolis in Hives

The first apiary I visited on the island of Oahu with Mr. Bovard, belonged to Mr. Wm. C. Joest of Nanakula. On opening a colony I was surprised to see little or no propolis. The combs were old yet they were so free of propolis that they appeared almost like new. I soon learned that there is a great shortage of propolis on the Islands and the bees have been known to try to gather tar from the roads in an effort to obtain a substitute. The

scarcity of propolis has two advantages. There is no difficulty in bleaching the beeswax and it is much easier to remove the combs from the hives and keep them clean.

While in the same apiary a large centipede, about eight inches long, ran from underneath one hive to another. This centipede is poisonous and can inflict a painful wound. On the other hand there are no snakes on the Islands or any large carnivorous animals such as mountain lions, bears or wolves. However the usual quota of other apiary pests commonly found in tropical countries is present, such as the greater wax moth, ants, termites and toads. Some of the beekeepers place their colonies on stands and use other standard measures to prevent damage from these pests.

Unlike most of the South American Countries, the cost of labor on the Islands is about as high as on our mainland. Since the cost of transporting honey to the mainland is high an effort is being made by some of the beekeepers to stimulate more honey sales in Honolulu and some of the other large centers. This effort should bring significant results.

Hawaii is not a paradise for beekeepers but in spite of some problems the possibilities for profitable honey production on the Islands are still good.

Trap out Bees with Pipe

FRANK C. BOYLE
Essex, Connecticut

I TOOK THIS picture of my aluminum down-spout trap that made it possible for me to trick a strong colony into leaving a house and go into my hive.

I found that water-pump heavy grease worked well in plugging up the edges of the aluminum flange and all nearby holes and cracks.

At the foot of the pipe is a wire netting cone (with ¾ inch hole) tied on with rags and cord. It took five weeks to complete the project.

So you don't **always** have to have the decoy hive up real close to the house entrance. I don't relish the work of building strong scaffolds to hold a heavy hive up in the air.

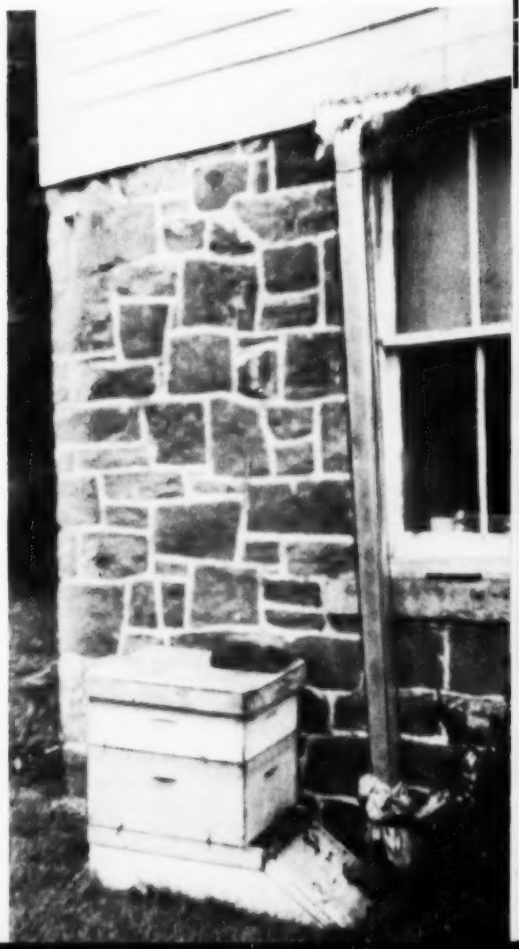


Fig. 1. Mrs. Bellmann cuts cold candied honey for making honey-centered chocolate candy. Pieces on the tray are again placed in the cold room for firming before covering with chocolate.

The Diehnelt Family

Walter Diehnelt lost his bottling business during the depression due to the failure of a local bank. Since then he has built his reestablished enterprise to the point where today he handles about two million pounds of honey.

Part II

H. J. RAHMLOW
St. Petersburg, Fla.

IF YOU DRIVE out to Walter Diehnelt's Honey Acres, near Menomonee Falls, Wisconsin, today you will see a very active and prosperous looking honey and bee business — a business producing honey from 1500 colonies of bees; processing and handling about two million pounds of honey. There are about ten full-time helpers; from six to ten extras for the holiday gift-package trade, as well as a son and son-in-law in the business.

It was not always so. The first time I met Walter—back in the early 1930's, he looked like a man who had suffered a crushing blow and was struggling upward with a smile on his face. Indeed, it was really true—he had lost everything in the crash, had sold his home and business in Milwaukee to pay off his obligations and was starting over.

With some experience in marketing honey, Walter Diehnelt had, after the first World War, built up and expanded a prosperous bottling business, handling pickles, olives, jams, horseradish, mustard, vinegar and honey. On a Friday afternoon in late 1929 he had deposited a very large sum of money in his local bank. Monday morning the bank was closed. Depositors received nothing. He had purchased a boat load of olives from Italy but after the depression hit there was no demand for the olives and little for his other products.

Walter began to look around the farming area near Menomonee Falls for a new place. He had purchased pickles from farmers there and payments had gone through the Menomonee Falls' Farmers and Merchants Bank, which never closed its doors. The bank officers knew Walter and now backed him to a new start. He also gives much credit to his wife, who during these trying days backed him all the way. When they had sold their nice home and plant in Milwaukee and he proposed moving to the country, she said: "Why certainly—we made it before and we will make it again". And they did!

Had Faith in Honey

It is important to note that Walter Diehnelt abandoned the line of products—pickles, olives, etc. on which he had built his first prosperous business and now decided to go into the production and selling of honey and honey products exclusively. Experts might well have said, "It can't be done"! He did have one advantage. He knew the Milwaukee trade and developed his market rapidly, but we can be sure he didn't work an eight-hour-day; more likely it was two eight-hour-periods most days. Walter has always been very "promotion minded" and featured his honey in a number of ways—by State Fair exhibits and sales, radio anouncements, T-V appearances and newspaper publicity. At first honey sales were largely in five and ten pound pails but soon the one and two pound jar was

Fig. 2. Pieces of cold candied honey are covered with chocolate and almonds by Mrs. Delores Gastrau and Mrs. Peggy Beck. They have been doing this work for about 12 years. The chocolate is kept hot in the stainless steel well and is stirred constantly.

added. Then came other lines: candied honey, honey candy, novelty packages and containers, gift boxes and beeswax candles.

The Diehnelts sell honey in every way possible. One truck with route man calls on retail stores. Brokers and wholesale grocers have an important place. A great deal of honey in barrels is sold to bakers. The important thing, Walter says, is to keep your trade after you get it. The color, quality and cleanliness must always be what the buyer wants. He told us about bakers who suddenly quit buying because they were offered cheaper honey, only to come back and then ask him to liquefy some honey which had granulated, or take off their hands honey containing foreign matter which had ruined a batch of baked goods. Bakers have no way of filtering or heating honey.

Candied Honey

More than 20 years ago the Diehnelts developed their own method of making candied honey, which is the whitest and smoothest we have seen.

After heating liquid honey to dissolve all crystals, about 10 per cent of granulated honey is added as "seed". The size of the crystals of the seed determines the size of the crystals in the new candied honey. After thorough mixing, the mixture is run through "hammer mills" or grinders made especially for this purpose. The creamy liquid is then run into containers and rushed to a refrigerator room where it hardens in just a short time into white, fine-grain, smooth candied honey. About 25 per cent of their retail honey sales are now of candied honey.

Honey Candy

The process of making candied honey leads right into making chocolate-covered honey candy and bars. The mixture is run into tins to the proper thickness and then hardened in the cold room. When solid and firm the candied honey is cut into pieces of the proper shape and size by machine. Fig. 1 shows a machine and a tray of pieces ready for covering with chocolate, after, however, first being taken back to the cold room for proper firming.

Two girls now cover the pieces with chocolate and almonds as shown in Fig. 2. They keep stirring the chocolate to keep it smooth and at the right

Fig. 3. Fifty-eight cans of granulated honey are placed on stainless steel covered hot water pipes in the heating room by plant foreman George Czarnecki. He has been at Honey Acres 11 years. Water in pipes is at 180 degrees F. and honey gets up to 130 degrees F.; drains into tanks below.

temperature. It is quite a trick to cover the pieces to the right thickness and have the chocolate keep its rich black color.

The Diehnelts have been selling these chocolates and bars for many years and they make the only hand-dipped chocolate honey candy we know of.

Heating and Filtering Honey

At present all the honey extracted or purchased is stored in 60 pound tins. We read about the research being carried on to improve honey containers, since the 60 pound tin cans are subject to rust; also on methods of processing to better preserve honey's original flavor and aroma. In the future we should see much progress in this field.

The honey heating room shown in Fig. 3 is quite important in a large operation. Up to 58 cans are heated at one time. They are placed on hot water pipes covered with stainless steel. The water is at 180 degrees F.

As the honey liquefies, it runs into tanks below at about 130 degrees, where it also settles, and wax particles come to the surface. It is then pumped into the "flash heater", shown in Fig. 4 and brought up to 160 degrees F. As shown in the picture, barrels can be filled from the cooling tanks on the second floor after the honey has passed through the filter.

From the flash heater the honey is pumped through the filter shown in Fig. 5. Foreman George Czarnecki is holding a Johnson and Johnson filter cloth, which is placed between the discs shown in the rear, made locally. The honey is pumped upward through the filter at 11 pounds pressure. When the cloth gets clogged the pump motor is stopped by a switch because of built up pressure. The filter cloth is then changed—one cloth may run almost a day.

After being run through the filter the honey is pumped to the various stainless steel tanks shown in Fig. 5. It cools and flows by gravity to the bottling machinery on the floor below or is pumped to the mixing tank for candied honey.

Holiday Gift Boxes are Popular

It is an easy step to prepare gift boxes from the various products described, although their promotion and sales is an art in itself. When the holiday season approaches and the weather turns cold so that chocolate and candied honey will remain firm in the boxes, six to ten extra girls are employed to prepare boxes of various sizes. The largest boxes contain a one-pound carton of candied honey; a jar of light clover honey; one pound box of chocolate covered honey candy and two beeswax candles. Boxes are sold through the trade, gift shops and by direct mail orders.

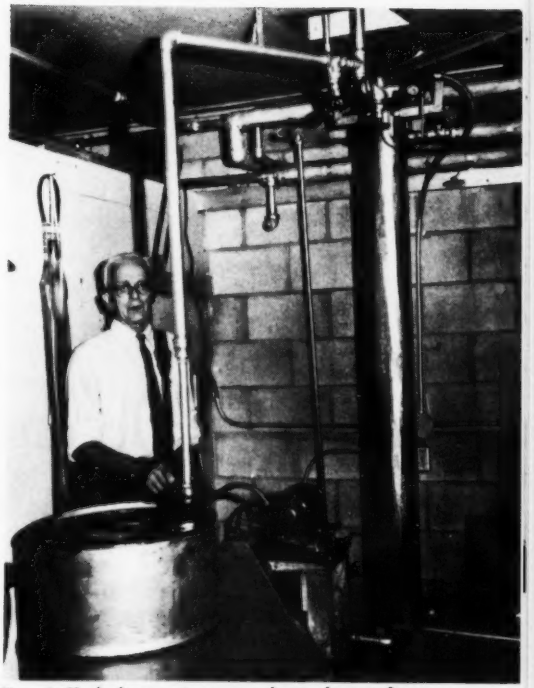


Fig. 4. Flash heater in center heats honey from 130 to 180 degrees. Honey from heating room is pumped through a two inch pipe in the center which is surrounded by a four inch pipe with hot water at about 200 degrees. Walter Diehnelt shows how barrels are filled from tanks on second floor after honey is filtered and cooled.

Beekeeping Methods

I found so much of interest to write about in the fields of history and processing that it leaves but little space for the Diehnelt's beekeeping methods.

Walter Diehnelt, Jr. or "Bud" as everyone calls him, has developed some very efficient methods for handling their 1500 colonies of bees. His methods are adapted to the location—a radius of about 50 miles—around Milwaukee. Bees are wintered out-of-doors in yards averaging about 50 colonies.

Fig. 5. Mr. Czarnecki shows a sheet of filter cloth. The filter is at the rear—honey is pumped upward through cloth. Storage and cooling tanks are at left and right.

This area west and north of Milwaukee is favorable for beekeeping, although crowded, as are all the best locations. Some sweet clover is found and alfalfa yields well in years of ample spring rainfall and hot dry weather when it is in bloom. When there is plenty of moisture throughout the blooming season the White Dutch and Alsike clovers bloom in pastures and hay fields and yield well.

American foulbrood is a problem everywhere but this area has been so thoroughly inspected and the disease kept under control that Bud says they find only a few colonies each year and these are burned as the quickest and cheapest method of control under the circumstances.

Some European foulbrood has been found recently and Bud is of the opinion that some strains are more susceptible than others and is trying to eliminate those strains.

All honey is extracted during the summer, as fast as it is ready. In the hot weather the honey is removed by the use of carbolic acid covers. Escape boards are used in cool weather.

In the fall all colonies are weighed and sugar syrup is literally fed by the carload, to bring each colony up to the weight they have found safe for wintering.

Walter Jr.'s chief interests when not working with the bees are his wife and two children; a new home on a wooded lot of several acres; photography and lecturing with colored slides on beekeeping to local organizations, schools, 4-H clubs, etc. He is very good at it too. His talks are most interesting because he has many pictures of bees and bee activities which always fascinate an audience.

The Future Looks Bright

"What is the future for our children and grandchildren in the bee and honey business", we asked Walter Diehnelt. He spoke with deep conviction and replied, "It is just fine"! I felt he wished he could be a young man again and go on from here. He said: "There is more and more honey being used, especially by bakers. Bread and pastry stay fresh twice as long when made with honey. The American Honey Institute has a real job and a fine program. Every packer and every beekeeper should boost honey in his own area—it's uses and health value. If the demand keeps on growing we won't be able to produce enough. Beekeeping is a wonderful hobby too. 4-H Club members often become so interested in the mysteries of beekeeping they continue to work with them as they grow older".

Walter often appears on a T-V Homemakers program in Milwaukee. He boosts **honey, not** his own brand. He pays $125 for a one minute commercial to promote his own brand.

A Woman is a Born Salesman

ANN MICHELE HAPP
Galveston, Texas

SHE CAN SELL anything from Christmas cards to the first paid trip to the moon! It has been proved that women are the key to the success of your United Fund, Polio, Mental Health and other Community Drives.

However, it has been proved also, that a woman must **believe** in a project or product before she will take the time to promote it.

I wonder how many beekeepers feel that they have sold their wives on the idea that honey is worth promoting? How many of you took your wife to the last State or National Beekeepers' Meeting? How many of you encouraged her to join the State and National Beekeepers' Women's Auxiliary? Or, how many of you have taken the time to explain to your wife just how much it really means to you to raise bees.... and why you, **yourself,** are sold on beekeeping as a profession?

You are probably thinking, "My wife sell honey!....that's out of the question! She's too busy with her homemaking duties. She spends half of her time carting the kids from one place to the other, Girl Scouts, Boy Scouts....or off to the doctor for a check-up or shot; and when she isn't playing taxi, she's busy with PTA, Church Bazaars, or some other Club Meeting".

Once your wife becomes interested in promoting honey, these daily contacts will be her source of pushing her product.

For instance, Cub Scouts love to show off their skills, so she teaches them to make a simple and delicious batch of honey, peanut butter and dry milk candy. In turn, each little scouter will rush home and convince his mother to buy a jar of honey so he can make her some candy. This same idea will work with Brownies, Girl Scouts and other children's clubs.

When your wife serves a delicious honey cake to the PTA or Church Bazaar, most every woman present will ask for the recipe. Being a woman of foresight, your wife has ordered extra copies of the recipe from the American Honey Institute and quite "by coincidence" has a few copies tucked away in her purse to contribute to the women.

Keeping the programs interesting at study clubs is always a problem. But, when it is your wife's turn to present a program she will come up with a short resume on the "Life of the Honeybee" or "The Nutritional Value of Honey". She will keep the members spellbound and eager to try some honey for supper.

The doctor would love a change of pace from hearing about aches and pains, so your wife greets him with a smile and hands him a large jar of honey with comb, for his own enjoyment. She also gives him a pamphlet on "The Uses of Honey in Diets and Medicine", written by a man of his own profession. Who knows, if he isn't already, but that he may start prescribing honey for baby formulas and other diets to his own patients.

The home demonstration agents and home economists already realize and appreciate the value of honey. So, when your wife sends them a little friendly reminder, they will gladly include a honey dish in their next meeting or class.

The American Honey Institute gives two good chances a year for women to promote honey, The National Honey Week and Honey for Breakfast Week. When your wife approaches the local newspapers, TV and Radio Cooking Programs with household hints and recipes (tested) using honey, they will be eager to give publicity for honey during this time.

These are only a few of the many ways that a wife can find to promote honey. If you have not convinced your wife, "Love me, love my bees", then you are losing a number one sales executive for your profession!

Schoolhouse, the basement of which serves as a bee cellar. Empty supers are stored in the classroom.

S. E. BLAND
Assistant Provincial Apiarist
Regina, Sask., Canada

A Saskatchewan Bee Cellar

One method of wintering bees in the far North.

MR. DEYELL recently wrote our office to see if he could obtain an article on cellar wintering in Saskatchewan for the November issue of Gleanings. We imagine that behind Mr. Deyell's request was the idea that if beekeepers were successfully wintering bees in northern Saskatchewan, their methods would be of interest to beekeepers in climates where the winters are less severe.

The truth of the matter is that most of our bee cellars have long ago caved in and very few Saskatchewan beekeepers undertake to over-winter their bees. We estimate that over 90 per cent of the 30,000 colonies in our province are established from package bees obtained from the United States.

Most Apiaries Build up from Packages

A two pound package of bees established here in April builds up very quickly to gather a good crop of honey in July and August after which the bees are killed and the supers stored away until restocked with bees next spring. Some beekeepers are establishing their colonies with one and one-half pounds of bees. In order to cut hauling costs, these beekeepers now obtain three pounds of bees in a package with two queens. The bees are distributed evenly between two hives, each of which receives a queen. Under the quick growing conditions of our northern latitudes such hives with proper care will develop into productive units that are indistinguishable from those established from two pound packages. If one is hauling his own bees from the States, a three pound package with two queens takes up no more room in the truck than a two pound package. If one is using railway express an extra colony is obtained for only one additional pound in shipping weight.

From the foregoing, it almost looks as though Saskatchewan is an unlikely source of wintering information. We do, however, have several beekeepers who successfully winter bees in cellars, and we went to one for information.

When approached for a story on cellar wintering Fred Newman of Tisdale protested that there was nothing unusual or different about his operations that would interest the readers of Gleanings. Feeling that Fred was mistaken, we continued to question him.

Fred, incidentally, kept his first bees in 1926 and has been keeping bees commercially since 1940. He operates 1,000 colonies and has an average per colony yield of 150 pounds. He likes to maintain about 25 colonies in each outyard adjacent to fields of yellow sweet clover, red clover or rape. Twenty-five colony units enable one to manipulate the colonies and move on to another yard before cross bees upset the entire yard as they will sometimes do when larger outyards are maintained. Willows and dandelion provide spring sources of pollen and nectar.

Reasons for Cellar Wintering

Why does he winter when other commercial beekeepers rely exclusively on package bees? Fred had several reasons for wintering. By wintering he feels he can maintain more colonies with less hired help since his beekeeping operations extend over a longer period. He gets his bees established a month earlier than most package bee operators and is working bees a month after the package men have gassed their bees. His bees usually come out of the cellar with sufficient food, eliminating an extensive spring feeding program. Fred feels his wintered colonies reach their brood rearing peak ahead of the honey flow while many package colonies rear brood on the flow. This is important in a year when the flow ends early (as it did this year, practically no honey being gathered in August).

By wintering one's best colonies, quality is maintained and one is not so dependent on the uncertain spring weather in the states where the package bees and queens are raised. Poor mating weather in California or the Gulf States can result in heavy queen replacements and delays, which are very serious in the short summer season we have in Saskatchewan. With Canadian honey moving slowly, Fred feels that it is good business to use some of it to over-winter his stock. When honey remains unsold, it becomes necessary

View of elevator that loads and unloads hives for cellar wintering.

for many northern beekeepers to borrow cash for the purchase of the package bees needed to get back into business. This can be considerable as Fred points out and would amount to $5,000 in his case.

Preparing Bees for Cellar

In the fall when removing the honey crop any queenless colonies are gassed. Seventy-five per cent of the colonies are cut down to two supers but 25 per cent of the colonies are left three high to guarantee enough honey for winter. The final check and preparation for the cellar is left until October and is carried out when the temperature is about 40 degrees F. If the temperature gets higher than 55 degrees F. work ceases, since the bees become too active and robbing commences. Combination coverall, veil and neophrene gloves are worn at this time. The second super is removed and the lower super checked. Any combs that are completely devoid of honey or pollen are removed and the bees shaken in front of the hive. These empty combs are replaced by combs partially filled with pollen or honey. These are obtained from the second super or from supers brought to the yard on the truck. Fred feels he can detect queenless colonies at this time of the year by their poor clustering and noise. These colonies are gassed. The second super is given the queenright colonies and the two supers are held together by cleats. Each colony has now been supplied with plenty of pollen and 60 pounds of honey and is almost ready for the cellar.

One modification is necessary to the second super. A one inch hole is drilled in the front just above the handhole. This provides ventilation in the cellar and a spring flight hole until the bottom boards are clear of dead bees. The prepared hives are left in the summer yard until the first of November when they are picked up by truck and placed directly in the bee cellar. No quiescent period is necessary between trucking and placing the bees in the cellar.

Fred Newman has two cellars. One is under the extracting house and measures 22 feet by 50 feet with a 7½ foot ceiling. He likes to place about 450 colonies in this cellar. The other cellar is under an old schoolhouse. This cellar is 24 feet by 60 feet with a 7 foot ceiling and holds about 600 colonies. The schoolhouse is in good condition and came up for sale when the larger school unit came into being. Many such rural schools have closed down in Saskatchewan, the pupils now attending larger schools by bus. While the school cellar might not be what Fred would build if he were building a bee cellar, it has been easily adapted to this purpose.

Interior of Cellar

Six inlets were built from the six cellar windows. The cross-section of each intake shaft is two square feet and brings air to within a foot of the floor. Dampers are provided in these intakes to regulate the flow of air manually.

One large exhaust outlet is provided running from the cellar ceiling through the roof. This exhaust is fitted with a 20 inch fan driven by a quiet, continuous running, heavy duty motor which is connected to a thermostat set at 40 degrees F. The thermostat should be barn type thermostat with a range from 20 to 60 degrees F. The thermostat is set in the center of the building about four feet off the floor. The exhaust outlet must have a damper which opens when the fan is in operation and closes when the fan stops, to avoid back drafts.

In the latter part of March the cellar temperature reaches 60 degrees F. and holds there for several hours in the late afternoon with the fan going continuously but the bees do not seem to suffer any or become too restless. Since outside temperatures may approximate 60 degrees at this time the temperature could scarcely be lowered without refrigeration but the movement of air seems to have the desired effect although bees do cluster about and above the hive entrances on these warm days. The cellar ceiling is insulated with 12 inches of insulation and keeps remarkably dry.

Colonies are moved into the cellar off the truck by means of a motor-driven belt. They are placed three hives high in double rows on either side of narrow aisles about 24 inches in width. Entrances are facing aisles. Colonies are not placed directly in front of inlets or under outlets.

Colonies are brought out of the cellar in the spring the exact date being

influenced largely by snow and road conditions. In some springs it is necessary to use a snow plough to clear a location. They are placed in groups of 100 to 200 and moved from these yards to permanent locations when roads improve. They are first checked for feed and later checked for brood. The one inch top entrance hole can be closed easily and cheaply with a plug of screwed up newspaper. The bees propolize the paper from within the hive making an effective seal against the weather. It is also easy to remove.

Sulpha Fed in Spring

Fred's losses in his cellars are seldom over five per cent and most colonies may be divided for increase. Sulpha is fed in the spring as a disease preventative in a sugar syrup through a mechanical sprayer on the truck.

To some beekeepers wintering bees may appear to be a lot of work. Fred Newman doesn't think so and he derives a lot of satisfaction from the knowledge that despite poor honey sales, threat of rail strikes, or poor queen mating weather in the southern states, he will be in the bee business again next year with strong over-wintered colonies.

Research Grant

A $50,000 research project is under way at Cornell to find out what hormone can hold 75,000 honeybees together in a colony with the queen bee as the center of attraction.

Human health and beekeeping both stand to gain from the work, according to Prof. Roger A. Morse, apiculturist in the New York State College of Agriculture at Cornell. Morse received the $50,000 grant this year from the National Institutes of Health.

He hopes the three-year project will uncover some basic facts about the role of female hormones in human health and about how beekeepers can keep their colonies at a high pace of honey production and fruit pollination.

Past research indicates honeybees live and work together only because they are "addicted" to certain bioactive materials, or "social hormones," secreted by the queen, the only reproductive bee in the hive, Morse said. These hormones seem not only to hold the colony together, but also to help determine the queen's egg-laying capacity.

Apiculturists have already proved that the queen definitely secretes such a material and that periodic removal and replacement of the queen affects the colony's morale, he added.

When the queen is removed, the other bees become divided. They will not work their normal amount in the field, but attempt instead to rear another queen, sometimes with success. When the old queen is restored, however, morale returns.

If beekeepers can learn how to keep the queen "hormonally attractive," they will be able to ensure a high rate of production in the colony, Morse said.

Further, since there is a definite relationship between animal and human hormones, and since hormones play a large part in human health, basic information on the nature of the bee's hormones may have important implications for the understanding of various human diseases, including cancer.

The Cornell specialist will rear large numbers of queen bees with specially prepared colonies and run laboratory analyses on different glands of the queens. In addition, he will introduce test queens of different ages and genetic backgrounds into normal colonies and study the effects on the other bees.

He also plans to collect and investigate the glands of related bees, such as the bumblebee and carpenter bee, and of various wasps and hornets. Dr. Norman E. Gary, research associate, who joined the Cornell staff this year, will work with Professor Morse and conduct much of the laboratory and field analyses.

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Vandalism Bad for Bees and Beekeepers

R. F. FERGUSON
Kansas City 3, Kansas

THIS PICTURE WAS taken by the Kansas City Star. It pictures me with the broken and torn remains of a colony of bees, one of four turned over and practically destroyed by juveniles within the city limits of Kansas City, Kansas, 3500 Rainbow Boulevard, premises of S. R. Brunn Construction Company.

This occurred apparently on or about January 17th to 19th and was found upon checking the yard January 22nd to open hive entrances after an eight inch snow which occurred on January 19th and 20th. No snow was found under hive covers scattered about. In one case brood frames were dumped out flat on rough ground and all that saved a small cluster was a depression under the combs where the bees clustered. In all cases the hives were so knocked apart that the bees were exposed to the elements of the weather.

This yard of 15 colonies was fenced with six foot chicken wire netting, a padlocked gate and a sign of "NO TRESPASSING" posted beside it. By the time I arrived the cluster heat had melted the snow from above one cluster a circular opening about 10 inches in diameter, and another about five inches. So many bees were lost before my arrival, plus the fact that I was forced to re-shuffle hive parts and place them again in the remaining hives in a temperature of 20 degrees, that it is feared none will survive. It will be necessary to feed from now on out if they should have a ghost of a chance.

Novel Escape Offered

A $25.00 reward is offered for arrest and conviction of the culprits. However, to induce and teach beekeeping, arrest will be withheld with the provision that each guilty person shall purchase one or more colonies of bees and maintain them under supervision of the Northeastern Kansas Beekeepers' Association or that of an agreed association elsewhere, until the age of 21 years is reached. Anything less will automatically renew charges which will be pressed to full extent.

Incidentally, I cannot conceive why the beekeeper, unfortunately, seems to be of a class who cannot get insurance upon his wares and against this sort of vandalism. It would seem a wise move that beekeepers band together (possibly via the American Beekeeping Federation) and establish their own insurance facilities on this and damages from bee stings. These things have discouraged some beekeepers until they gave up, and we have far too few bees and beekeepers as of today.

"THAT'S THE TROUBLE WITH THOSE SMALL FOREIGN CARS - NOT ENOUGH ROOM TO SELL THEM MORE"...

THE BOYS and THE BEES

A stinging experience the culprits will never forget.

EDWARD GOODELL
KANSAS CITY, KANSAS

IT HAPPENED BACK in the 1930's, and at the time, I was in my early 20's, and had as a pal a boy of Turkish blood. His parents had a beautiful eight acre place in the suburbs of Kansas City. They had the oriental's love of beauty, and as they grew flowers to sell, their whole place looked like a lovely Asiatic garden; even the house, and out-buildings had gingerbread work added to carry out the oriental theme.

The bee yard consisted of about 20 hives situated in the apple orchard, beside a small building that was used both as a cider-press, and honey house. These hives were the standard 10-frame type, but these people had added a false aluminum peaked roof to the telescoping covers, with turned up eaves; false turned-up corners were put on each super so that when the hives were assembled, painted, and gilded in bright colors they became miniature Chinese Pagodas, and became a part of the overall decoration.

The day in June of which I speak was rather cloudy and cool, and the bees weren't flying very much. As my pal and I were both interested in photography, I had gone to his home to enlarge some negatives I had, as he had a well equipped dark-room. The boy's parents decided to go to town for the afternoon, and we were left alone.

A few moments after his folks had left, we heard a car drive up and park in front of the house; then someone knocked at the front door. As we couldn't open the door of the dark-room and spoil all of our work, we ignored the knocking, thinking that whoever it was could come back a little bit later if it were important.

In a few moments the knocks stopped. By now we had our pictures in the fixing solution, and were just getting ready to turn on the lights and wash them, when we heard voices outside the house and directly below a ventilating fan in the dark-room wall.

We heard a boy's voice say, "I told ya nobody was home; didn't we just see 'em drive away"? Another voice replied, "Yeah! I guess you're right. We can drive the truck down close to the fence by the orchard; then we won't have very far to carry them bird-houses. I know a place in Lawrence where we can sell 'em for at least five bucks a-piece".

Quickly dumping our pictures into the washing pan, we left the dark-room and quickly slipped out of the house by the back door. As we did so we saw four boys between the ages of 15 and 17, down the road, just getting out of an old panel truck, and sneaking over the board fence that surrounded my friend's property.

"I'll bet those guys think our beehives are bird houses," whispered my friend. "Let's slip in the apple house, and see what happens".

We hurried down a row of grape vines that hid us from the boys, and entered the apple house. Then we removed a window ventilator. By doing this, and because the building was dark inside, we could see everything that went on, without being seen.

Soon we saw two of the boys approach one of the hives that happened to consist of a hive body, and one super. The boys were probably from the city and had never seen beehives before. They both took hold of it by the hive body handle slots and lifted it between them. We heard one boy say to the other. "I wonder what the heck is in this thing?" "I don't know," replied the other. "But it sure is heavy."

What those thieving boys didn't realize, was that when they lifted the hive, they left the bottom board setting on the concrete stand. So that now they were carrying a box of "hell-fire," with the whole bottom open. It will always remain a mystery to me why the bees didn't rush out and start stinging at once; but they did not. Probably, because as I have said before, the day was rather cloudy, and for a day in June, rather cool. The thieves carried the hive to the fence, where their two companions waited by the truck to help them lift it over the fence.

Retribution Struck

One of the boys holding one end of the box slipped, and a corner of the hive came down on the top of the fence with a sharp rap. We saw about a quart of bees drop out of the open bottom, right down on the boy's feet. They didn't notice what had happened, being too busy tugging and lifting, to get the hive over the fence.

Then the god of fools, that had been protecting them, looked the other way and it happened. One of the young hoodlums gave a yell of pain, and turning loose of the hive, grabbed his legs. The hive torn from the grasp of the others fell to the ground. The super cracked loose, and the whole thing fell over on it's side and the bees arose in a cloud.

By that time those boys were capering wildly about and tearing off their clothes; as scream after scream of agony rent the air of that summer day. And with each garment they would discard, there would be a bunch of bees waiting to pop anything new that would be exposed.

The two culprits inside the fence clawed their way over the fence, and with their companions ran down into the neighboring cow pasture across the road, where they dived into a large round metal stock watering tank.

The bees continued to strike at the bobbing heads for awhile, and then returned to the overturned hive.

After about an hour and a half those chastened boys climbed out of that stock tank, and being afraid to approach the truck or their clothes, because of the nearness of those angry bees, they skulked along in the bushes beside the highway, and headed toward town looking like nothing so much as a band of naked savages from some primitive time.

My friend and I laughed until we were weak, we allowed the bees time to more or less quiet down, then putting on bee clothes we righted the hive and put it back on its stand. It hadn't been damaged at all.

The boys didn't return for their truck or their clothes all the rest of that day. And when a couple of days later I saw my friend again I asked him what had happened to them. He said that he had gathered up the clothing and put it on the seat of the truck, with a note saying that we had seen the whole performance, and that he had the license number of the truck; and if they came back to steal anything else he would give it to the Sheriff. They never came back to steal again.

About three o'clock the following morning he heard the motor of the truck start up and roar out of there.

I have always wondered how those boys explained their battered condition to their parents.

ACARINE MITE Reported in U. S.

HOMER LEN FOOTE
Supervisor, Apiary Inspecton
Sacramento, Calif.

A consignment of one queen bee and attendants originating in Northern California and consigned to Australia was found upon arrival to be infested with mites which were reported to be Acarapis woodi (Rennie).

AUSTRALIAN quarantine officials advise that "the infestation as determined by the examination under quarantine comprised three mites found on one escort. **These occurred on the thorax without any apparent diseased tracheal condition**".

This is the first report of **A. woodi** in U.S. bees. However, a subspecies, **A. woodi externus,** which is easily mistaken for **A. woodi woodi,** was found in Quebec in 1926. It is not known which subspecies has been intercepted in Australia. Specialists at the Commonwealth Institute of Entomology in London, England, where the identification was made, have informed California authorities by cable that the three mites sent to them from Australia were determined "as falling in biometric overlap of subspecies **woodi** and **externus**."

As its name implies, **A. woodi externus**, lives externally upon infested bees, **causing no apparent disease.** Whereas, the subspecies, **A. woodi woodi,** infests the tracheae (breathing tubes) of honeybees, causing a diseased condition known as Isle of Wight or Acarine disease.

Drones, workers and queens may be affected. The presence of the mites does not inevitably cause the death of the colony. The rate of reproduction and spread of the mite may be slower than the increase and changes in make-up of the population of a strong colony during the spring and summer. The colony, under these conditions, may overcome the infestation. This situation is most likely when only one or a few bees are initially infested. If large numbers of bees become infested through

robbing, drifting or hive manipulations, the colony may be quickly weakened and killed. Colonies infested in the fall will usually die the following spring or before.

The disease causes heavy losses of bees in various countries in Europe and the British Isles. It has more recently been reported from Argentina, Uraguay and India.

The Honeybee Act of 1922 was passed by Congress to protect beekeepers of this country from this most serious disease by restricting the importation of live bees into the United States. At present, Canada is the only country from which such bees are allowed entry.

The presence of an infestation of **A. woodi** in Northern California has not yet been confirmed. The 200 double-nuclei, known to have been present in the mating yard from which the infested shipment originated, have been located. These nuclei are no longer together at the same apiary, but have been traced by means of "celling" dates to four locations in two adjacent counties within California.

No symptoms of Acarine disease have been apparent in any of these colonies this season. The presence of mites in the tracheae shortens the life of an infested bee, gradually weakening it until the bee can no longer fly. This causes many bees to die in the field. Normally, in a heavily infested colony, affected bees can be found crawling in front of the hive, unable to fly, especially after a period of confinement to the hive.

Samples of bees have been examined from each of the suspected nuclei, as well as from colonies which have received surplus bees or queens from these nuclei during the season. Each sample consists of 15-35 bees of foraging age or older. This gives a 50/50 chance of discovering a 2-5 per cent infestation of **A. woodi.** The samples have, for the most part, been hand-collected in order to secure suitable diagnostic material.

Each bee in every sample has been individually dissected to expose the tracheae, which were then carefully examined for signs of mite activity under a 20x binocular microscope. Questionable tracheae were transferred to slides and examined under a compound microscope at 100-140x magnification.

Since receipt of the Australian report, 571 samples (about 17,000 individual bees) have been captured, dissected and examined in this manner with negative findings. This represents all of the nuclei in question as well as the closely associated colonies.

The results of these investigations would seem to indicate that the mites in question were **A. woodi externus** rather than **A. woodi woodi** as has been commonly supposed in recent Australian publications regarding this discovery.

Investigations are being continued. If it is discovered that Acarine disease exists in California, immediate action will be taken at County, State and Federal levels to determine the extent of the infestation, to prevent its spread and to evaluate the opportunities for eradication, in order to protect North American beekeepers from this most dreaded pest of bees.

Attention – Comb Honey Producers

SOMETIME AGO at a meeting of the Bristol County Beekeepers' Association, one of our older beekeepers, Mr. Arthur Hunt, told us a good joke about "Comb Honey" which I would like to share with you and the readers of your fine magazine:

An elderly man who was not feeling too well told a beekeeper friend that he "just loved comb honey". So he was presented with a large frame of cut comb honey. Later, when asked if he needed more he replied, "Oh, no, we still have some left. We had some trouble eating it, so my wife put it through the meat grinder. It came out just fine."—Mary V. Maslanka, Wife of the Recording Secretary, New Bedford, Mass.

Drouth Shrinks California Honey Crop

WILLIAM RUTLEDGE, III
North Hollywood, Calif.

LACK OF RAINFALL has dealt a severe blow to the California bee industry, usually No. 1 in the nation in honey production.

"If things don't get better, I'm going to chocolate-coat my bees and sell them for eating," sarcastically quipped Cumming M. Chaney, Canoga Park beekeeper. "The lack of moisture has turned 1959 into almost a complete failure in the bee industry. Another year like this and hundreds of beekeepers in Southern California will be forced out of business," he remarked.

Last year was one of the best for Golden State beekeepers in the last 15 years.

"Bee raising for honey works in cycles, but the darn thing is that you never know when the cycles are going to be.

"The honey flow in California should have begun in April.

"It is common practice for beekeepers to rent hives to farmers for pollinating purposes. There are more than 5,000 hives in the Bakersfield area just pollinating alfalfa seed."

Chaney, in partnership with his son-in-law, Bud Varney, maintains more than 2,000 hives in Antelope Valley. Chaney winters his bees in the foothills and lets them feed on eucalyptus trees, sage, and orange. The eveness of the climate makes it possible to get some flight days out of bees during the winter months. If the winters are harsh, the bees will go into semi-hibernation.

Processors are paying premium prices for the light-colored honey, which comes from plants like avocado, orange, and clover. Chaney says that he feels the dark-colored honey, mostly from wild flowers, is richer in vitamins and nutrition value.

"I can't prove it, but I think that it is the extra minerals that give honey the darker color. The best honey is the way the bee made it," he declared.

Chaney also maintains a warehouse in Calabasas, where he separates the honey from combs. Everything is utilized—the honey to the processor and the wax to candlemakers.

The mysterious Royal Jelly, from a special gland in the head of a worker bee, is bringing $250 per pound. Chaney, with his four staff men, has been able to harvest a pound of this jelly every day from his 200 special hives for this purpose.

There is considerable research into uses for this royal jelly, including possible treatment for cancer, he said. This jelly is now being utilized as a food supplement and in cosmetic and sun-tan lotion manufacturing.

Last year Chaney reports that he averaged 200 pounds of honey from each hive. His normal production, he said, was from 60 to 120 pounds per hive.

People and ants are Chaney's principal problems. Swarms, which build up when bees become overcrowded and a group strikes out to start a new hive, often bring excited calls from residents. To cope with this; Chaney has started charging a fee to come and get the bees out. In one six-week period this spring he had more than a 100 calls from frantic people about new swarms forming on their property. Twenty-eight paid his fees to remove them.

He declared that this should be a city problem and the local authorities should have experts to come out and remove such swarms, which excite people but which cause no trouble if they are not molested.

Research Review

DR. ROGER A. MORSE
Research Editor of Gleanings and Ass't. Prof. of Apiculture
Cornell University, Ithaca, N. Y.

What is a Species?

THE DISCOVERY of an Acarine mite in California* and the inability to pin down exactly which one it is has probably prompted a lot of questions. We are quite proud of our rockets and our other advances in science but there is much in the field of natural science which is still unanswered.

Just because an animal can or cannot mate with another does not determine whether it is or is not a species. When a name is assigned to an animal we like to think that the animal is a very definite thing and the offspring will look like the parents. Such is not always the case.

The question about **Acarapis woodi woodi** and **Acarapis woodi externus** is just such a case. When names were assigned these two mites the authors were dealing with distinctly different mites. Each author was able to find characteristics in one which could not be found in the other.

We might say that it is like describing a row boat and a canoe. The two can be quite different. Most row boats have flat bottoms, while canoes have round bottoms. But some men have made row boats with round bottoms. Usually a row boat has one end pointed and one end square. Sometimes we find a row boat with both ends pointed or both ends square.

The article on Acarine states that mites were found which fell within the "biometric overlap of subspecies **woodi** and **externus**". This merely means that the characters of the mites were in between. The fact that the mites found in California were found on the outside and not the inside of the honeybees is in our favor. At the same time the fact that there was an overlap means we must continue to search and search the area where these mites were found in California. Certainly some more mites, either external or internal, will be found somewhere but the results so far indicate that the search will take a long while.

The fact that specimens may be found which overlap species merely means that these animals are still in a state of change or evolution. Because animals do change is the reason we have so many animals on earth.

For an animal to be called a new species it must be different in form or life history so that it can be distinguished from another species. Usually separate species cannot mate. Usually species have two names, such as **Acarapis woodi.**

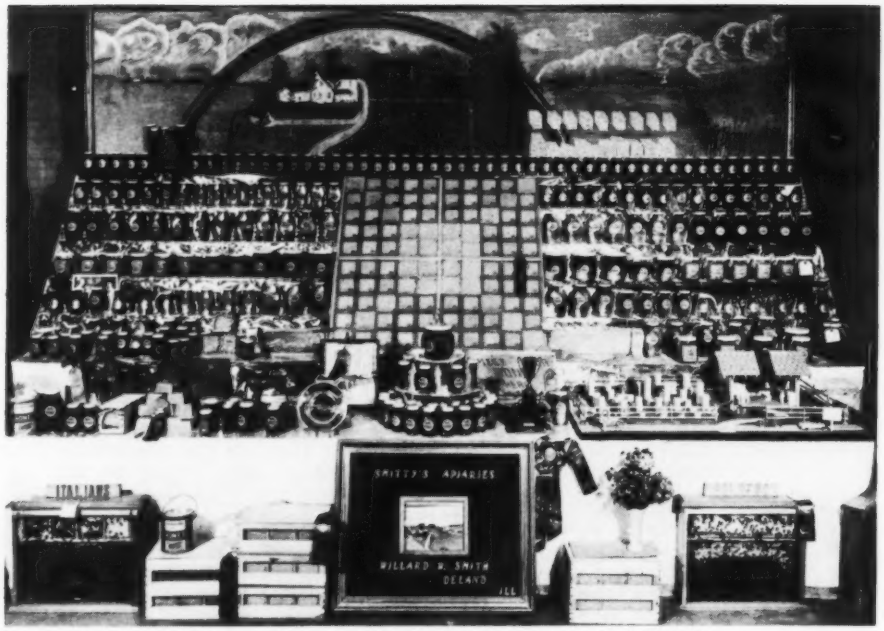
When three names are used to describe a species then the third name indicates a subspecies meaning that the relationship is closer than that of a species. Whereas there are rules for naming species the whole process is still a man-made one. Thus one person's definition of a species may vary slightly from that of another person's.

There are over a million species of insects in the world. The business of naming and identifying insect species

* See page 666

(Continued on page 703)

NEWS REEL



An attractive bee and honey display at the Illinois State Fair, put on by Willard W. Smith, Deland, Illinois. Such a display is bound to create consumer in'erest in honey.

A special trophy for the best bee display at the 1959 Santa Clara County Fair was awarded to the Evergreen 4-H Club. Cash premiums were awarded in the bee, honey and beeswax departments. Stover-bred Caucasians and Garon-Italians received first places in the two classes of bees entered. — Photo by Richard E. Nieman, San Jose, California.

CHAMPIONSHIP AWARDS won by Mr. and Mrs. A. W. Gubert, of Inkster, Michigan, are presented by American Honey Queen, Kay Seidelman of Ionia. The Guberts won trophies and ribbons for the best golden honey, white honey and beeswax in the judging at the American National Honey Show that was one of the features of the 110th Michigan State Fair. On October 28th Kay presents the prize winning honey to Pres. Eisenhower at the White House as a part of The National Honey Week Celebration.

This reusable glass tumbler is manufactured by Hazel-Atlas and supplied to The Honey Sales Co. of Minneapolis, who pack Land O'Clover Golden Treasure Honey. It holds 7½ ounces of honey, is printed in a brown, green, and yellow design.

Editorials

Subscription Rates Increase

COMMENSURATE WITH the constant increase in the cost of labor and materials the publishers of Gleanings, after 12 years without a yearly subscription rate increase, have found no choice but to yield to the growing pressure. The new rates will be as follows. A one year subscription, $2.50; a two year subscription, $4.50; and a three year subscription, $6.00. These rates will go into effect on January 1, 1960.

Annual Beekeepers' Day Favored by Apimondia

WE WERE REMINDED recently by the secretary of Apimondia which is the world organization of beekeepers, that during the meeting of the World Congress of beekeepers held in Rome, Italy, in September 1958, the organization went on record as favoring a beekeepers' day to be held each year, December 13, for the current year.

The purpose of beekeepers' day is to bring to the attention of the general public the importance of honeybee products. Beekeepers' organizations over the world could formulate programs that would be found stimulating and helpful. Authorities on various phases of our industry could be asked to be on the programs. Newspapers would be asked to carry articles on bees and honey. County farm agents could be alerted to mention beekeeping in their radio broadcasts.

It is hoped that this suggestion coming from the world organization of beekeepers may be taken seriously. The beekeeping industry which is an important branch of agriculture, deserves more recognition than it is receiving.

A Test Case

PROBABLY SINCE the very earliest attempts by man to provide a home for the honeybee in the hopes of sharing her stores, the beekeeper has been plagued by litigation prompted by his irate and fearful neighbors. In most cases they are the result of this industrious insect's spunky nature and her willingness to give her life in defense of her home.

However, occasionally a suit arises from the fact that bees do not observe land boundaries when they go forth to gather nectar. Such a case arose recently near San Antonio, Texas. It seems the plaintiff is a farmer who has a large patch of clover which in past years he has rented for honey production. He alleges that a beekeeper who had rented this area in the past approached him for the coming year's rental but offered insufficient money. When he refused he claims the man went to a neighbor and made an agreement to put his bees on the neighbor's land as close to the clover patch as possible.

He further alleges that now the bees not only forage from his clover patch but also keep him, his family and his livestock at bay. He also notes that he asked the neighbor to have the beekeeper remove his colonies but was refused.

He claims the alleged conspiracy between the neighbor and the beekeeper have caused him damages to the extent of $500.00.

Damage suits these days, no matter how silly they may seem, must be taken very seriously. A suit of this type could set a precedent that can be very damaging to both beekeeping and beekeepers. It is very important for beekeepers to conduct their business transactions with sufficient care to lessen the possibility of legal entanglements.

An article entitled "Rights and Responsibilities of Beekeepers" by O. K. Blanchard, in the November, 1956 issue of Gleanings is valuable as a basic guide. Reprints of this article are available upon request. Please send a stamped, self-addressed envelope for this purpose. However, if you have specific legal problems we suggest you contact a competent lawyer in your locality.

Say "Full Flavored" not "Strong Honey"

AN ITEM APPEARED in a recent issue of the "Federation News Letter" put out by the American Beekeeping Federation which suggested that honey that has a pronounced flavor be referred to as full flavored, not strong honey. This seems to be a worthwhile suggestion.

Some may associate full flavored honey with dark colored honey. This is sometimes, but not always the case. Some light colored honeys have what some would call a strong flavor.

Obviously, honey that is so full flavored as to be objectionable to the taste, is not suitable for table use, except perhaps, by a few people who would fancy such a flavor. Such honey may be sold to the bakery trade.

It is difficult, if not impossible to suit the tastes of all people. Some like a honey that is full flavored and others prefer that which is mild flavored. Perhaps that is one reason why there are so many flavors of honey in the world.

It would appear that people prefer the honey to which they have become accustomed. People in buckwheat areas like buckwheat honey and those in clover areas prefer clover. With all the different flavors of honey in the country it should be possible for people to select the kind they like best.

Vandalisim Should be Squelched

THE MAJORITY of people have a profound respect for bees and refrain from tampering with hives in a beeyard. A few years ago one of our Root Company customers asked us to send him the most savage queen we could find. He, of course, meant a queen reared from a strain of bees known to be cross or savage. Apparently this beekeeper wanted a strain of bees that would protect his yard from vandalism.

There are different types of vandalism. Some vandals destroy or push over hives, others steal honey or hives of bees. This latter should perhaps be termed pilfering. Some years ago we had 39 hives pushed over in the country, each with three and four supers of honey. We asked for police cooperation in attempting to ascertain the culprits. We failed to obtain a single clue.

Some may think that outapiaries located back from main highways in some secluded spot are less likely to be molested than apiaries in plain sight of passers by. This may not be true. Hunters may take a shot at hives or push them over.

A sign erected in each outyard reading, "Under Police Protection" may do some good. It would seem, however, that each beekeeper who has outyards should be on good terms with the owner of the property on which bees are located, so that he will notify the beekeeper in case the apiary is molested.

It is important also that the beekeeper establish a good reputation in the community. Passing out some honey occasionally to people living near bee yards should help to create a favorable attitude toward the beekeeper.

In spite of all that may be done to prevent vandalisim and pilfering there are a few who seem to delight in destroying or stealing property. If those few culprits could meet with the hot and painful reception accorded the boys mentioned in the article "The Boys and the Bees", page 664 of this issue, they would learn a lesson, never to be forgotten.

Live and Learn

PROPOLIS PETE

EVERYBODY HAS troubles. Some beekeepers produce so much honey that they don't know what to do with it. So they give it away. As for me, my troubles are just the opposite. I could probably sell as much again as my bees produce.

As of right now, I don't have enough of my crop left to put it on my cereal next winter. The phone rings a couple of times a day asking when they can get honey, since the stands are sold out. Everybody thinks that all I have to do is go out to the bee yard and turn the spigot to get more, so they are mad at me when I can't help them out.

This happens to some extent every year, but this year is far worse than usual. Due to calamities reported early in the season the crop is woefully short. Even that August flow that I got for the first time didn't bring in enough to satisfy an ant. The prospects for fall surplus are dim, for we haven't had any rain for 50 days now, and the late goldenrod and white aster are pretty much dried up. That could change tonight. It looks promising for rain right now. But the season is so far gone, that the best I can hope for is winter stores.

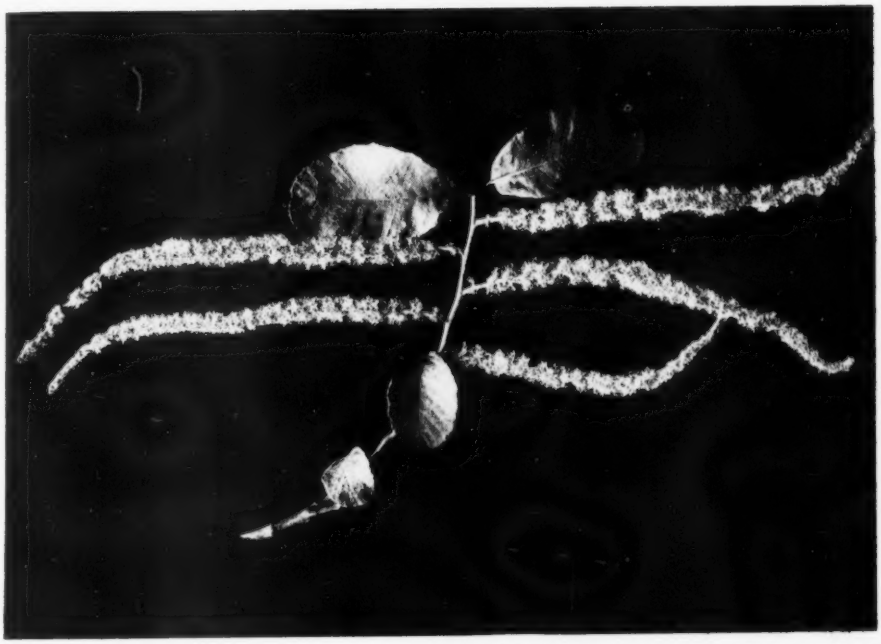
Now half of the people who read this are going to say that I should buy honey rather than let my customers go elsewhere. That is not as easy as it sounds. In the first place there are no local beekeepers to furnish substantially the same product. To buy upstate and truck it down here isn't very practicable, because trucking charges on top of what I would have to pay for the honey would pretty nearly wipe out any profit. I would be willing to settle for a small profit just to keep my customers happy, but there would be almost nothing left after the cost of melting, straining, and bottling. Seems like the truckers make more on it than we do, and all they do is provide the transportation. Maybe 'tain't fair, but that shows what organization can do.

Right there is one of the weaknesses of the honey industry. And with the 57 varieties of beekeepers that there are, I don't know just what can be done about it. If we had an organization that could and would put us out of business if we didn't conform, things probably would be a lot different. And we wouldn't like it. Who wants to be that kind of beekeeper? At least we still have some degree of freedom to be ourselves, even though few of us will get rich at it.

Let's face it. The vast majority of beekeepers are what they are, because they want to be, and not because there is no other way of making a living for them. What with the beekeeping fraternity consisting of such a heterogeneous (now that's a swell word) and undisciplined mob, it's a big order to get them to work together. With the hobbyists, amateurs, back-lotters, sideliners and professionals all pulling in different directions, or not pulling at all, it is an all but impossible job to weld them into an organization that could improve their lot. So, as far as we can see ahead, we will have to work out our own salvation.

That doesn't mean that there is nothing we can do about it. Beekeepers never will be able to form an organization that could control production, quality and marketing, and see to it that the rules were lived up to. But there are two services open to them that can and will help, and which are doing a grand job with the little money and help that is given to them. One of these is the American Beekeepers' Federation, and the other is the American Honey Institute.

Every once in a while I hear something said to the effect that it does no good to join up because they don't seem to be getting any place in particular. Well, it is true that they are not going very fast, but good grief, what do you expect them to do with the little that they have to work with? If you stop to think about it, you will realize what a whale of a job they are doing with what they have. It wouldn't break you to kick in a little bit more if you already are a member, and to join up if you are not.



Chinquapin (Castanea nana).—Photo by T. H. Lovell.

Let's Talk About HONEY PLANTS

DR. HARVEY B. LOVELL
University of Louisville,
Louisville, Ky.

Chestnuts. R. H. Bunnage writes from Portland, Oregon that he has an orchard of chestnuts and that bees are working the flowers and loading up with pollen (on July 17). He asks, "Could it be that the bees do obtain nectar and perform a pollination service, or is it possible that the fanning of their wings helps to distribute the pollen through the air to the female flowers? So far as I can observe from watching the few female flowers I can see from the ground, the bees do not touch the stigmas or any part of the embryo burr. On the other hand I am told that the flowers do contain nectaries and nectar which can be seen under magnification." Several beekeepers have reported honey from chestnut or the smaller chinquapins in various parts of the country.

In Florida the dwarf chinquapin **(Castanea nana)** produces a dark, thick honey with a very poor flavor. E. R. Root considered it the worst of honeys and compared the flavor to a mixture of cayenne pepper and quinine. Fred Anthony of Apalachicola, Florida, told me that he used to bury the honey from chinquapin to prevent the bees

bringing it back and spoiling his other honey. On the other hand Lillian Arnold (Bull. 548--University of Florida Exp. Station) states that the honey although bitter is sometimes sold to the baker's trade.

Washington. L. W. Bundy writes from Langley that his home is on Whidbey Island in Puget Sound, an island 60 miles long by seven miles wide. The island is warmed by the prevailing wind from the Japanese Current. The honeys of the island are largely from the huckleberry, salal, Oregon grape, maples, willows, blackberry, vetch, white clover, madronas, etc. He continues, "I noted an unusual floral development this year: A forest fire spread to some cleared but unplanted land in the summer of 1958. It burned off the grass and ferns from some 20 acres of this land. Now there had been, here and there, a sprinkling of wild vetch—a type having very few flowers.

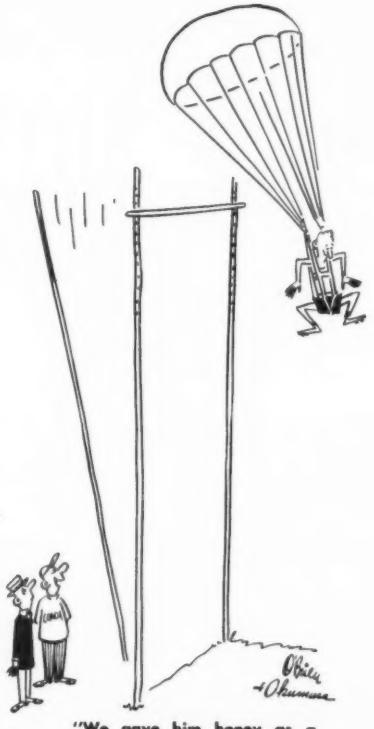
"This year there was a very heavy growth on this burned-over land of a vetch with all the characteristics of the ordinary cultivated vetch which was often used as a cover crop among the many old orchards that once covered the island clearings. Could the fire action on the dormant seeds have caused this change?... Furthermore, the heavy flowering of the new type is worked differently by the bees.

"In the small flowered type the flowers are seldom visited but apparently much nectar is secured from the nectaries at the junction of the petiole and the stem. In the heavy-flowering type the flowers are worked heavily but the extra-floral nectaries are almost disregarded. For some reason cascara and the vine maples so often found in Puget Sound Country, and which bees work so avidly, are something I have found here only when transported and planted. Possibly they just never emigrated from the mainland?"

Mr. Bundy adds that most of the surplus is from fireweed and vetch but sometimes he finds a surplus from strawberry, raspberry or blackberry. He also mentions that there is a heavy gowth of purple loosestrife on the shores of Lake Washington.

Oklahoma. Mr. Raymond H. Irvin of Woodward writes that he sometimes makes 150 pounds per colony from horsemint. He says that white horsemint blooms all over these big prairie ranches as far as the eye can see from the middle of May well into June. He has seen over 100,000 acres of horsemint blooming in pastures going to waste because there were no bees to work it. He has taken off deep supers of horsemint honey every 10 days as long as the flow lasted. He adds, "Our honey here produced from the white variety of horsemint is almost equal in flavor to white sweet clover and is clear white in color and thick in body. I haven't had any ferment yet. I read that the government won't accept it as grade A because of the minty flavor but for my part it is even milder than the clover honeys and doesn't burn my throat after eating."

Other comments by Mr. Irvin are: He prefers the flavor of locust honey to all others. In the fall he gets a flow from the Rocky Mountain bee weed in red canyon land even when there has been a drought.



"We gave him honey as a last minute energy food."

Luscious honey applesauce meat balls and hot biscuits. Uml — Courtesy The Kellogg Co.

Meats a la Honey

MRS. BENJ. NIELSEN
Aurora, Nebraska

TIRED OF THE same old ways of preparing meats for the family menus? Using honey in the field of meat cookery is one of the more difficult branches of honey cookery, 'tis true. A light hand—easy does it, so the finished product is not cloyingly sweet. Properly used, Nature's golden sweet adds a delightful fillip to this basic day-in, day-out food.

The Nielsen's hope that you will enjoy this toothsome pair.

Honey Applesauce Meat Balls

One-half cup packaged corn flake crumbs (2 cups corn flakes) 3 tablespoons chopped onions, 1½ pounds ground beef, 1½ teaspoons salt, ¼ teaspoon sage, optional, ⅛ teaspoon pepper, 1 egg, slightly beaten, ⅔ cup thick honey sweetened applesauce, 1¼ cups (10½-ounce can) tomato soup and ½ cup water.

If cornflakes are used crush them slightly. Combine cornflakes with re-

(Continued on page 703)

The Effects of FUNGICIDES

In order to control various fruit diseases, a variety of fungicides are applied in great quantity by the commercial orchardist. Some of these sprays are applied of necessity when the fruit trees are in full bloom. The beekeeper immediately asks the question, "How do these materials affect honeybees"?

CHARLES C. KING
Ohio Agri. Exp. Sta.
Wooster, Ohio

INVESTIGATIONS concerning this question reported prior to 1950 invariably dealt with the inorganic sulfur and copper formulations. Within recent years the organic fungicides have almost completely replaced the older materials, and for the most part their effects on honeybees have not as yet been determined.

Shaw (1953) determined that phenylmercury lactate (puratized) had little effect on field tested bees. Parsons and Martin (1956) reported that in laboratory feeding tests, 50 percent of the bees were killed by Puratized Apple Spray and Tag 331 within one day; by glyodin within two days; and by Phix, Coromerc, and Coro SDD within

Table 1. Fungicides used in these experiments.

Common name	Trade name	Amount per 100 gallons of water
Captan	Captan 50 W	2 lbs.
Dichlone	Phygon XL	½ lb.
Liquid lime sulfur	Lime sulfur solution	3 qts.
Organic mercury	Puratized Apple Spray	½ pt.
Organic mercury	Phix	¼ lb.
Organic mercury	Coromerc	½ lb.
Glyodin	Crag Glyodin	1 qt.
Organic mercury	Tag	½ pt.
Thiram	Thylate	2 lbs.
Zineb	Dithane Z-78	2 lbs.
- - - - -	Cyprex	1 lb.
Organic mercury	Panogen Apple Spray	½ pt.
Ferbam	Ferbam WP	2 lbs.

three to four days. Ziram, thiram, maneb, ferbam, dichlone, Crag 658, and captan were non-toxic or only slightly toxic. However, in field-cage tests, captan, dichlone, and maneb appeared to be toxic also. In laboratory feeding tests Dithane Z-78 (zineb) appeared to extend the life of the bees significantly. Shaw (1957) conducted field tests to de ermine effects of contact and residual activity of glyodin, ferbam, Puratized, captan, and sulfur. No serious mortality was noted from any of the materials.

In the spring of 1958 a series of experiments was designed at Wooster, Ohio, for the purpose of determining what effect the newer fungicides may have on adult honeybees. Thirteen fungicides including several promising experimental materials were selected for the investigation. In most instances they were used in concentrations recommended by the Ohio Agricultural Extension Service in the 1958 Orchard Spray Charts (Table 1).

The following laboratory tests were designed to determine possible lethal effects of these materials on adult worker honeybees: (1) direct contact with the spray material, (2) contact with a sprayed surface, and (3) stomach poisoning. Repellency effects of these materials were also studied in field tests.

Direct Contact with the Spray Material

Overwintering bees were taken from the hive and placed directly into specially designed immersing cages. Approximately 50 bees were placed in each cage with each treatment being replicated four times. The immersing cages containing the bees were then singly submerged in the spray solution for ten seconds. The bees in the check treatment were immersed in tap water. The cages were removed and allowed to drain for a few seconds. The bees were then transferred to uncontaminated observation cages (Fig. 2) and supplied with a 20 per cent sugar solution in the feeding vials. They were then placed in a constantly lighted room where the temperature ranged from 75 to 82 degrees F. The observation cages were examined every 24 hours and the number of dead bees was recorded. The dead bees were invariably located at the bottom of the funnel portion of the cage and could be removed very easily without any of the live bees escaping. Observations were continued until all bees in all treatments were dead (Table 2).

Thylate, Cyprex, and Ferbam WP were the only materials which demonstrated mortality significantly different from the check treatment. The 50 per cent mortality level is more reliable than the 95 per cent level for deter-

Table 2. Time mortality of bees used in fungicide toxicity studies Wooster, Ohio, 1958

Fungicide	Direct contact effect by immersing bees in spray solution		Residual effect by contact with a sprayed surface	
	No. of hours for 50% mortality	No. of hours for 95% mortality	No. of hours for 50% mortality	No. of hours for 95% mortality
Thylate	108*	290	219*	481
Cyprex	155*	244	355	559
Ferbam WP	161*	304	223*	495
Dithane Z-78	181	339	305	521
Puratized Apple Spray	202	387	348	553
Coromerc	216	352	316	550
Crag Glyodin	218	357	325	530
Panogen Apple Spray	228	355	339	557
Tag	229	380	408	554
Captan 50 W	239	489	321	510
Phygon XL	250	383	335	549
Phix	264	452	359	559
Liquid lime sulfur	266	426	366	547
Check	211	376	372	569

* Mortality significantly different from check.

mining differences between these materials.

Contact with a Sprayed Surface

The screen and funnel portion of the observation cage (Fig. 2) was immersed in spray solution for ten seconds. Tap water was used for the check treatment. This portion of the cage was then removed and set aside to dry. After three hours the cage was assembled complete with a 20 per cent sugar solution in the feeding vials. Approximately 50 overwintering bees were then introduced into each cage, each treatment being replicated four times. They were then placed in a constantly lighted room where the temperature ranged from 75 to 82 degrees F. The observation cages were examined daily, and the number of dead bees was recorded (Table 2). The dead bees were removed each day as explained in the previous study.

Thylate and Ferbam WB were the only materials which demonstrated mortality significantly different from the check.

As a Stomach Poison

The proper amount of fungicide was added to a 20 per cent sugar solution to form a concentration coincident to that which is given in Table 1. This solution or mixture, as the case may be, of sugar, fungicide, and water was then placed in the feeding vial of an observation cage. Three cages were used for each material. Approximately 35 overwintering bees were then introduced into each of these cages. They were placed in a constantly illuminated room with the temperature ranging from 77 to 80 degrees F. The observation cages were examined every 12 hours for two days and then every 24 hours for the duration of the experiment. At each observation the dead bees were removed as in the previous studies.

Abbott's (1925) formula for mortality correction was applied to the observed mortality. Linear regression of the corrected mortality was ample in most instances to provide a reasonable prediction for the LT50.* For the exceptions, a change of scale was used which then rendered a linear relationship. Ninety-five per cent confidence limits were calculated for the observed LT50. These computations are shown in Fig. 3.

Cyprex, Thylate, Tag, Phix, Puratized Apple Spray, liquid lime sulfur, Crag Glyodin, and Panogen Apple Spray demonstrated toxicity to bees when fed in 20 per cent sugar solution at concentrations which are used to control disease in the orchard. Coromerc, Phygon XL, and Ferbam WP were moderately toxic. Dithane Z-78 and Captan 50 W were only slightly toxic.

Discussion

It is to be remembered that these tests were conducted in the laboratory and that if these materials were subjected to field studies, similar results might not be obtained. Generally speaking, the bees used in these laboratory investigations were subjected to much more severe conditions than any foraging bee would encounter in the field. Therefore, it would seem logical to conclude that any material which did not demonstrate toxicity in the laboratory tests should not be toxic in the field. And also, a material may not necessarily be toxic in the field just because it proved to be toxic in the laboratory.

Repellency Investigations

An experiment was designed to determine whether or not these fungicides would demonstrate any repellency characteristics towards honeybees in the field. Eight-year-old Cortland and Red Rome apple trees were sprayed at Wooster, Ohio, during the full bloom period with each of the above listed fungicides. Due to the fact that the orchard was to be used for mite control investigations the following summer, Crag Glyodin was omitted from this test because of its possible effect on the mite populations. Single tree plots were arranged in a random design and treatments were replicated four times within each variety.

Three colonies of Italian bees were placed in the orchard to insure a sufficient number of foraging workers in the area to facilitate the study. Counts were taken at 2:00 p.m. on the day the trees were sprayed and on the two following days. With the exception of

* The LT50 may be defined as the time necessary for a given amount of toxicant to kill 50 per cent of the test animals.

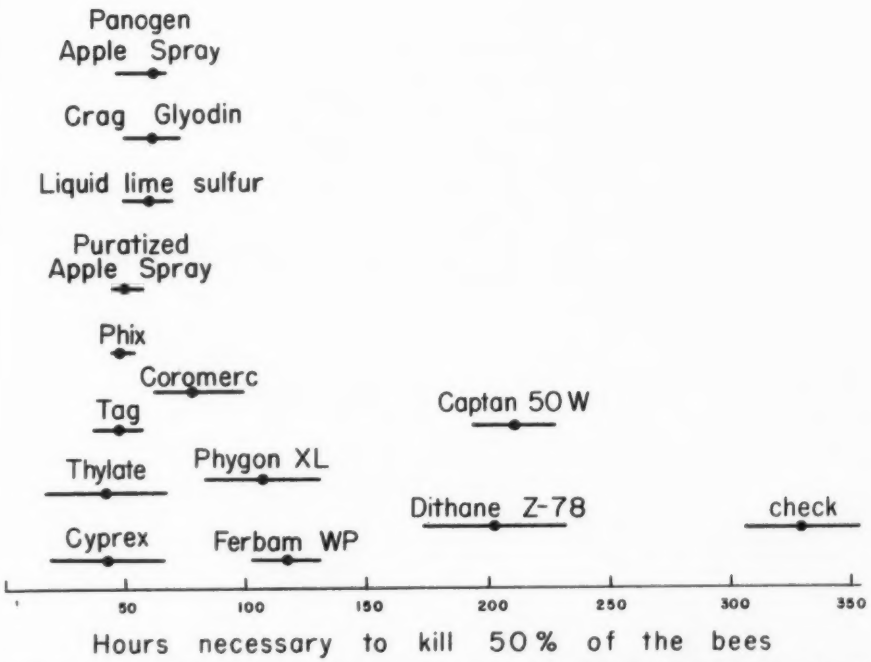


Figure 3. Results of feeding fungicides in 20 percent sugar solution to honeybees. The dots represent the observed time necessary for 50% mortality. The horizontal lines represent the limits of accuracy of the test; i. e. if the tests are repeated under identical conditions, half of the bees would be found dead at some instant within the period of time represented by the length of the horizontal line. There is no significance to the vertical arrangement.

one day when the temperature was 63 degrees F., excellent weather conditions afforded an abundance of foraging workers in the orchard. Each tree was observed for a period of one minute and the number of bees observed working the blossoms was recorded.

No significant degree of repellency was demonstrated by any of the materials.

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You Can Write

So why not get some paper and pencil and write down experiences you may have had such as: (1) Killing or trapping a bear in your apiary. (2) An easy way to hive packages of bees. (3) Some tricks in swarm control. (4) Migratory beekeeping, or other topics.

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The Federal Marketing Order

A great deal of controversy has arisen regarding the pending Senate Bill 1989 and House Bill HR 8269 which is an enabling act to place honey under federal marketing controls. In an effort to clarify the issue, the case for both sides is presented here.

In Favor of the Order

From the July Issue of the California Bee Times

IN THE LIGHT of the falling honey prices of the last few years it has become evident that we need more solutions to the problems that keep presenting themselves. The major problems, as I see them, are: crops too large for the domestic consumption, insufficient public acceptance of the use of honey as a sweet, increased competition offered by the cheaper honey from other countries.

It seems probable that the proper federal marketing order could go a long ways in solving these problems.

First we'll distinguish between a marketing agreement and a marketing order. A marketing agreement is a voluntary contract entered into by the

Secretary of Agriculture and a handler of a particular agricultural commodity. Such an agreement affects only those who sign it. If every handler in a particular industry signed a marketing agreement, there would be no necessity of a marketing order.

Definition of marketing order

A marketing order is an order issued by the Secretary of Agriculture which makes the terms of the marketing agreement program effective on all handlers in the industry, irrespective of whether they sign the agreement. In other words, a marketing order is a method by which the terms of the program can be made effective upon an entire industry.

Possible Uses of marketing order

There are many possible uses that the honey industry could make of a marketing order. Quality and grade can be regulated. In this manner, when a customer buys a jar of honey to serve on the table she can be sure that it is a good table honey and not tarweed. In another method the quantity of honey going to a particular type of market (such as retail or bakers) can be regulated to avoid price wars. Quantity regulation also provides for reserve pools and surplus control.

A regulation may be undertaken to fix the size, capacity, weight, dimensions, or pack of containers, provided no action may be taken which is in conflict with the Standard Containers Acts.

Provisions may be made to undertake marketing research and development projects for the purpose of improving the marketing, distribution and consumption of honey. This may include marketing research projects and those aimed at disseminating information for the purpose of increased consumption of honey. IT DOES NOT AUTHORIZE ADVERTISING OR SALES PROMOTION PROGRAMS. This could be used to finance research programs to prove honey's value as a health food or a healthy food.

Provisions can also be made for prohibiting unfair trade practices and to require that handlers announce their selling prices.

Now, there are many combinations of these possibilities that could produce good programs. I will mention here only one which presents itself. Without claiming it would be the best or even entirely workable this is only an example of what could be done.

How it would work

The administrative committee can set grades for table honey which would provide that only these grades could be marked "table honey". This wouldn't preclude darker or stronger grades which could be marked "cooking or baking honey" from being used on hotcakes, but it would help prevent housewives from doing this through ignorance. From past sales records a quota can be set on these retail types of honey. Next, from similar records a quota can be set on the industrial uses of honey. Any honey outside of these quotas is surplus in this country, and under a marketing order could be exported at a price competitive with the world market while distributing the cost evenly and not hurting any handler. In this way the honey industry can subsidize its own exports without crawling to the Federal Government for export subsidies. Any new uses found for honey could be subsidized in the same manner.

How it would come about

The formulation and development of a marketing order is somewhat complex and requires considerable time and effort. There must be a desire on the part of the industry to enter into a marketing program. A preliminary proposal is drafted for consultation by industry members and groups. General agreement should exist within the industry concerning the detailed provisions of the proposal.

The industry proposal is submitted to the Secretary of Agriculture with a request for a public hearing. Out of this hearing will emanate a clear program which if approved by the Secretary of Agriculture will be submitted to the growers and handlers for approval.

At least two-thirds of the growers by number, or by volume of product covered by the program must approve the issuance of the order. This means two-thirds participating in the referendum and not two-thirds of all growers in the industry. The handlers of not less than 50 per cent, by volume of the commodity covered must sign the agreement. If, however, handlers fail

or refuse to sign the agreement, the Secretary may, nevertheless, issue an order if he finds and determines that it is the only practical means of advancing the interests of the producers, and that the failure of the handlers to sign the agreement tends to prevent the effectuation of the declared policy of the act.

The area affected must be limited to the smallest regional production area practicable. It is generally felt that the smallest area that could be included in a honey marketing order would be all of the states west of the Mississippi River.

The burden of regulation under a marketing order falls upon handlers. The statute specifies that the cost of administration of a marketing order shall be financed by assessments upon handlers.

All marketing orders are administered by a committee of handlers and growers. The method of selecting the committee members is outlined in the order. It is hoped that by the time all of the various state conventions are over this fall, that a definite program can be developed at the Federation meeting in Phoenix and the hearings and referendums can be conducted next year.

Against the Order

R. D. BRADSHAW & SONS **Wendell, Idaho**

OUR NATIONAL honey industry is currently being pressured to have the United States Congress pass legislation to pave the way for establishment of federal marketing controls on honey. Senate Bill 1989 was introduced by Senator Hayden of Arizona—House Bill HR 8269 by Congressman Hoeven of Iowa.

Legislation of this magnitude requires thorough study and detailed examination by all segments of the honey industry. The subject has not been on the agenda or presented for discussion at the national meetings of the American Beekeeping Federation. The National Honey Packers' and Dealers' Association is completely in the dark. The Honey Industry Council cannot justly serve as spokesman for the industry membership if the members of the industry are not fully informed on all aspects of federal marketing controls. The national legislation comes as a complete surprise to the majority of the industry.

Up-to-date much "heat" has been generated by the advocates of federal marketing orders. Many are at a loss to know why the urgency and why these bills should be passed without examination and a thorough probe of undesirable features. What we need is more "light" and less "heat". What little information has been published is in generalities and tends to paint a favorable picture of our industry under marketing controls. Such information has been conflicting, confusing and misleading.

Federal marketing orders, when applied to the honey industry, contain "sleepers" that will completely disrupt the normal channels of marketing and distribution. It is vitally important that these shortcomings be examined before the bills in Congress become law.

Federal marketing orders on honey have four fundamental defects.

1. Discrimination and Restraint of Trade:

Federal marketing controls can affect only those buyers and sellers dealing in interstate (across state lines), therefore, there will emerge two distinct groups. The **non-exempt** (interstate shippers) and the **exempt** shippers who operate within the borders of their own state. The sparsely populated states, where honey production is heavy, must depend on markets in areas outside their own state. Under federal marketing controls their "free" market can be eliminated. The exempt group could have a "free" and exclusive market to themselves.

You are dealing interstate if you ship one tin or a carload via truck, rail, air, express or parcel post. If your shipments in any way affect interstate prices, you can come under the control order.

Now get this — the exempt group have the right to vote on what the marketing controls shall be — yet, they can be exempt from all the provisions of the regulations. Is this fair and just? Is it democracy in action? Just how successful can any program be under this kind of rules and conditions? The whole program of marketing controls is preposterous when applied to the economics of the honey industry. And this isn't all, when it comes to voting, the interstate shipper's vote may not count, because under the broad powers delegated to the Secretary of Agriculture, under the Agricultural Marketing Act, he, (Secretary of Agriculture) has the power to disregard the votes of the interstate shippers if two-thirds producers (and they can all be in the exempt group) want marketing controls. It is unbelievable to think that our industry would give a second thought to federal marketing controls when the concentration of power can reside in the exempt group.

Interstate buyers and sellers are required to publish and post their prices. Those operating within state boundaries are exempt from price posting requirements. Those with posted prices cannot sell below the published price, therefore, the interstate shipper could well hold an unbrella over the local sellers who could under-sell without disclosing their selling prices.

Under federal marketing orders the "books, papers, records, copies of income tax reports, and memoranda as he (Secretary of Agriculture) deems relevant", of the buyers and sellers of honey in interstate, are subject to investigation by agents of the United States Department of Agriculture. Violators are subject to heavy penalties. (Exceeding quota or allotment subject to forfeit to United States a sum equal to three times the excess. Violation penalties not less than $50.00 or more than $500.00 for each day violation continues). Buyers and sellers operating within their state boundaries can be exempt from investigation and forfeitures and penalties.

The financial cost of administrating, policing and enforcement is assessed to interstate buyers and sellers. Those buyers and sellers who deal within their state boundaries can be exempt from this financial burden.

2. Impractical:

During the last war a request was made to ration honey. The War Food Administration made an analysis of honey distribution and found that the overwhelming majority (about 60%) of the tonnage was handled through a vast number of small beekeepers—producers—distributors, each peddling door to door or store to store. As a result of this analysis a ration control order was never initiated. It was deemed impractical by the Director of food rationing.

This same 60% could be exempt under a federal marketing order, thereby making the policing and enforcement impractical. Surely our industry would not want to establish machinery to permit federal marketing orders on the remaining 40% (who buy and sell across state lines), require them to carry the financial burden of a marketing order (required by law), post their prices, comply with floods of regulations—many of them conflicting and confusing and divert their limited resources and manpower when in final analysis no benefits would accrue to anyone. The apparent discrimination would split the industry down the middle with interstate shippers seeking court action for protection and survival under restraint of trade.

The beekeeping industry is much like the chicken and egg business with tens of thousands of producers over the United States and located in nearly every county. If this vast number falling into the so-called "exempt" group could be brought under the law, the policing and enforcement costs in money and manpower would be so great that at best, it would only raise the price of honey to consumers and lower returns to producers.

3. Does Not Solve Basic Problem:

More shelf space at the retail grocery store is our basic problem. In the battle of foodstuffs, federal marketing orders cannot give the honey people one inch more of shelf space. There are 5,000 to 6,000 items in the average

supermarket. Each item is seeking more shelf space. Honey producers, packers, bottlers and dealers are doing a substantial job in maintaing shelf space. This voluntary assessment program (Check-Off Plan) is a move in the direction of securing more shelf space. Federal marketing controls will destroy the past efforts, sap the initiative of individual marketers and will automatically kill the "Check-Off Plan".

Has the government solved the problem of other agricultural commodities? Can you solve politically what is essentially an economic problem?

4. Other Commodities Cannot Be Compared To Honey:

Strategists for federal marketing controls on honey tell us marketing orders have been successful on dates, raisins, almonds and figs. Investigation indicates clearly that they fail to realize the vast difference between these products and honey when it comes to economics of distribution. One basic difference is the above products are produced in only a few counties in the United States, whereas honey is produced in every state and nearly every county in the United States. To prove this point— let's check the Agricultural Statistical Year Book 1958 published by the United States Department of Agriculture, which indicates that California produces over 95% of the nation's total production of dates, raisins, almonds and figs.

Every member of the honey industry is aware of the widely distributed production of honey.

There is one more fundamental difference between the marketing of honey and dates, raisins, figs and almonds. These latter products are sold almost 100% to processors, dealers and handlers, whereas, it is estimated that 50% to 60% of the United States honey crop never goes through handlers, processors or dealers but is sold directly by producers store to store—door to door.

Now, ask the proponents of federal marketing controls how they can honestly justify comparing honey that is produced in 48 states with dates, figs, almonds and raisins that are produced in only one state. It is a rash comparison and without substance.

Conclusion:

Supporters of Federal marketing control emphasize the two bills are only enabling acts—no cause to worry because they will have no immediate effect. This reasoning is misleading because a vote against these two enabling acts can well be the **only** vote interstate buyers and sellers will have. As pointed out previously, the Secretary of Agriculture is given the right (under the Agricultural Adjustment Act) to disregard the vote of interstate shippers if two-thirds producers (including the exempt group) insist on instituting controls. Certainly, therefore, a vote in favor of these enabling acts constitutes a vote to pass subsequent control of your business to others.

The honey industry is composed of hard working, sincere individuals who stay awake nights endeavoring to solve their problems. They live and breathe their business because they like it—yet, we all make mistakes. Now, are we ready and willing to turn our investment of time and money in our business over to the government and let decisions be made by individuals (exempt group) who have nothing to lose? If we make a mistake no one suffers but ourselves, but if the government makes just one wrong decision under marketing controls, the entire industry will suffer.

It is unfortunate that we seldom become alarmed by the loss of an intangible. If we lose part of the plant, or five acres of land, or 100 colonies of bees by spray, we object violently. But lose some priceless, unseen thing like a free market and we rarely get excited. We must be consantly alert and not be deluded by the promise that someone else will look out for us.

It is apparent that those who want to impose federal marketing orders on the honey industry have failed to research the program for defects and properly evaluate the serious impact such orders will have on normal channels of distribution. The supporters' sincerity to better the economic position of the honey industry is not questioned—but federal controls are not the answer because they are definitely not applicable to the marketing of honey. It would be a backward step for our industry and could even be termed negative action.

1959 Honey Production and Stocks on Hand September 15 For Sale

State and Division	Colonies of bees: 1958 (Thousands)	Colonies of bees: 1959 1/ (Thousands)	Yield per colony: 1958 (Pounds)	Yield per colony: 1959 1/ (Pounds)	Honey production: 1958 (Thousand pounds)	Honey production: 1959 1/ (Thousand pounds)	Honey for sale in producer's hand on Sept. 15, 1959 (Thousand pounds)
Maine	7	6	18	17	126	102	31
N. H.	9	8	30	33	270	264	79
Vt.	11	11	37	49	407	539	205
Mass.	19	18	16	16	304	288	86
R. I.	2	2	18	18	36	36	13
Conn.	15	13	19	20	285	260	68
N. Y.	197	187	44	52	8,668	9,724	3,306
N. J.	31	33	26	35	806	1,155	647
Pa.	143	143	24	29	3,432	4,147	1,742
N. A.	434	421	33.0	39.2	14,334	16,515	6,177
Ohio	301	268	18	43	5,418	11,524	5,992
Ind.	184	178	28	53	5,152	9,434	3,868
Ill.	163	153	33	47	5,379	7,191	3,955
Mich.	155	147	55	75	8,525	11,025	4,961
Wis.	196	192	77	83	15,092	15,936	10,040
E. N. C.	999	938	39.6	58.8	39,566	55,110	28,816
Minn.	250	272	110	103	27,500	28,016	12,327
Iowa	164	151	64	95	10,496	14,345	6,025
Mo.	122	122	31	28	3,782	3,416	1,093
N. Dak.	28	32	108	95	3,024	3,040	912
S. Dak.	49	59	165	90	8,085	5,310	1,168
Nebr.	63	61	90	88	5,670	5,368	1,825
Kans.	43	42	41	46	1,763	1,932	618
W. N. C.	719	739	83.9	83.1	60,320	61,427	23,968
Del.	3	3	26	24	78	72	25
Md.	29	30	26	24	754	720	274
Va.	139	136	21	26	2,919	3,536	1,061
W. Va.	103	101	16	18	1,648	1,818	454
N. C.	183	210	14	22	2,562	4,620	1,478
S. C.	58	60	24	22	1,392	1,320	238
Ga.	213	209	31	31	6,603	6,479	1,490
Fla.	274	277	57	54	15,618	14,958	5,534
S. A.	1,002	1,026	31.5	32.7	31,574	33,523	10,554
Ky.	118	118	24	15	2,832	1,770	336
Tenn.	155	167	19	18	2,945	3,006	601
Ala.	191	185	19	18	3,629	3,330	799
Miss.	73	78	28	28	2,044	2,184	568
Ark.	88	89	22	21	1,936	1,869	374
La.	88	92	29	26	2,552	2,392	957
Okla.	46	43	35	19	1,610	817	286
Texas	261	274	50	46	13,050	12,604	4,033
S. C.	1,020	1,046	30.0	26.7	30,598	27,972	7,954
Mont.	78	82	80	83	6,240	6,806	1,838
Idaho	186	201	62	44	11,532	8,844	5,130
Wyo.	37	37	97	61	3,589	2,257	564
Colo.	67	68	72	46	4,824	3,128	1,846
N. Mex.	11	11	95	72	1,045	792	341
Ariz.	95	91	75	70	7,125	6,370	3,504
Utah	54	54	50	31	2,700	1,674	1,306
Nev.	9	9	63	38	567	342	239
Wash.	97	100	53	41	5,141	4,100	1,763
Oreg.	53	55	34	41	1,802	2,255	902
Calif.	559	559	80	30	44,720	16,770	6,373
West.	1,246	1,267	71.7	42.1	89,285	53,338	23,806
U. S.	5,420	5,437	49.0	45.6	265,677	247,885	101,275

1/ Preliminary.

Jack Deyell beside the scale hive near the Gleanings office.

A Talk To Beekeepers

M. J. DEYELL

"The best advice that can be given to beekeepers is that if your present method of wintering has been successful over a period of years, continue with it. There is no need to change. A new method might prove harmful."
— Joseph Tinsley, Scotland
From his book "Beekeeping"

PRIOR TO 1934, during George S. Demuth's tenure as editor, Gleanings did not carry "Talks to Beekeepers" in the November and December issues. The consensus at that time seemed to be that bees in the north were passing through a period of quiescence and that nothing of importance could be done to improve their condition in winter quarters, provided, of course, the colonies were well supplied with winter stores and ample protection against the elements.

Another Word about Wintering Bees

As some of you may know, bees in the north have been wintered in trenches dug three or four feet deep. The bees were put into the trenches during late November, covered with straw, then a layer of earth placed on top of the straw. I presume some pieces of wood were placed underneath the straw in order to provide some upper ventilation for the bees. I have never seen this done but just today I talked with H. H. Root, Associate Editor of Gleanings, and he says that years ago he saw E. D. Townsend of northern Michigan put bees into trenches. At least they would be kept away from the cold weather and would likely winter quite well, provided they did not smother. If some of you beekeepers in the north wish to try this method of wintering, let me know next spring how you come out.

Wintering Bees under a Dwelling House

The first year I kept bees in Michigan, some 37 miles south of Traverse City, I was somewhat at a loss to know how to winter them. Since cellar wintering seemed to be in vogue at that time I decided to put over 200 colonies of bees in a large cellar under a dwelling house. Some work had to be done on the cellar to make it suitable for the bees. Since I would not be in that vicinity during the winter months I had a man living nearby look at the bees periodically.

I had hoped to get up into Michigan about the third week in November to put the bees in the cellar but an important event occurred in our family, our oldest daughter was born November 21 and I did not get up into Michigan until early December and when I got there the bees were covered up with about two feet of snow. That was one of the snowiest winters we have ever had in that area.

The apiary was protected on the north and west by woods. If I had left the bees covered up with snow they probably would have wintered well. However, I hired a man with a large set of bob-sleighs such as they use in the lumber camp and we hauled the bees from the apiary to the cellar. This molesting the bees didn't do them any good and in fact, some harm. But the bees did winter fairly well considering the fact that some of the colonies were none too strong when they were put into the cellar.

The following spring when I took the bees out of the cellar, some of the colonies were quite weak and I had to baby them along, taking bees from stronger colonies to give to the weak ones. I know now that if I had had strong colonies of bees during the spring honey flow, mainly from pin cherry which grew in abundance in that area, colonies would have stored some surplus from this early source and would have been unusually strong in bees for the raspberry flow that came later on. When I realize now how little I knew about beekeeping at that time, it is a wonder that I got any surplus honey at all.

My Trip to Ontario

About the middle of last June I took a part of my vacation and made a trip to my old home in Ontario, between Lindsay and Peterborough. Some of you perhaps read the bear story in the August issue of Gleanings. My brother-in-law, Elmer Skuce, who shot the bear, and my brother Huber Burke, live quite close together. At that time prospects for a honey crop from the clovers were anything but promising. The boys didn't say much but I had the feeling that they were rather pessimistic. One thing in their favor was that the spring months had been quite favorable for bees to get some honey from dandelion, fruit bloom and other spring sources. In that area bees usually build up rapidly during the spring honey flow.

Hot Spell Favorable for Nectar

Most of you who live in this general area do not need to be told how hot the weather was in August and in fact, the first week in September. We really had July weather. Apparently this kind of weather extended up into Ontario. My brother wrote me in early September that the bees had worked well on alfalfa and red clover during the hot spell and had surprised him by storing a fairly good crop of honey.

This goes to show that we can never tell until the very end of the season, what is going to happen. In this area of northeastern Ohio bees have done quite well, in fact, there has been no absolute dearth of nectar during the entire season and that is quite unusual.

At present we are having a honey flow from white aster, that is, when the sun shines long enough for the bees to work. We have had considerable rain just recently. However, the soil contains sufficient moisture and honey plants are in good condition. In some sections of the country white aster does not yield nectar but this is one area where it actually yields and the strange part of it is that it yields better after a light frost than it does prior to the frost. I suppose that is why the plant is called "frost aster".

I can remember some years ago, I believe it was in 1935, that we had warm sultry weather the third week in October. Bees were hauling in the nectar, and building burr comb. However, the weather suddenly turned cool and this was followed by colder weather. The bees did not have a chance to drive ethe excess moisture from the

(Continued on page 700)

NEWS and EVENTS

MONTGOMERY COUNTY
Beekeepers' Association
Norristown, Pennsylvania
November 12, 1959

The annual meeting of the Montgomery County Beekeepers' Association will be held at 8 P.M., November 12, at the Montgomery County Court House Annex, 400 Markley Street, Norristown, Penna. Officers will be elected for the ensuing year and an interesting program is planned.—J. O. Sweeton, Vice President.

FLASH FLOODS
Beekeeper Dies in Oklahoma Flood

Flash floods near Oklahoma City claimed the lives of beekeeper, Tony Jack Wells, 44, and his wife, Beulah, 40, of Stillwater, Oklahoma. The couple was killed when their 1½ ton truck, loaded with honey, plunged into a flooded creek between Ripley and Stillwater, Oklahoma.

A swollen creek and a heavy rain prevented the couple from seeing that a portion of a bridge had been washed out according to the Oklahoma highway patrol. Both apparently were killed by the crash, rather than by drowning, the patrol added.

EASTERN MISSOURI
Beekeepers' Association
October 6, 1959
Clayton, Missouri

The regular monthly meeting of the Eastern Missouri Beekeepers' Association was held October 6, 1959, at 7:30 P.M. at the Clayton Court House, Clayton, Missouri. Harvesting and packaging honey was the general discussion. The annual Baking with Honey Contest was held for the ladies.

The last meeting for the year will be held Tuesday, November 3, 1959 at 7:30 P.M. at the Clayton Court House, Clayton, Missouri. This will be a meeting of general interest and will include the election of new officers for the coming year. We have noted a steady increase in membership and attendance and interest has been good at each meeting during the year.—John C. Evans, Secretary.

SASKATCHEWAN
Beekeepers' Co-operative Association
Regina, Saskatchewan
November 18, 19, 1959

The 37th annual meeting of the Saskatchewan Beekeepers' Co-operative Association will be held November 18 and 19 at the Hotel Saskatchewan, Regina. The meeting will begin at 1:30 p.m. on November 18.

We have an imposing list of speakers lined up including Vic Mesley, Kemptville, Ontario, President of the Canadian Beekeepers' Council and Dr. C. L. Farrar, Head of Bee Culture Section, U.S.D.A., Madison, Wisconsin. As well we have asked four other top men in the extension and research field to attend: J. Corner, Provincial Apiarist in B. C., Pete Panikiw, Apiculturist, Beaverlodge Experimental Station, Dr. J. C. M. L'Arrivee, Brandon Experimental Station and G. H. Austin, Head of Apiculture Section, Research Branch, Canada Department of Agriculture.

We know this is going to be one of our best meetings in several years. Plan to attend and enjoy the speakers and the fellowship with other beekeepers.

SOUTHEASTERN MINNESOTA
Beekeepers' Association
November 7, 1959
Wabasha, Minnesota

Southeastern Minnesota Beekeepers' Association will hold its fall meeting at

the City Hall, Wabasha, Minnesota on Saturday November 7. The meeting will open at 10 a.m. with a report on honey marketing and the recent nine-State crop survey.

Speakers, slides and movies will all be on the program and no beekeeper should miss this meeting. Dinner will be served at The Saunders Cafe with hot biscuits and honey being at the top of the menu with the usual fine meal being served at noon. All are welcome! —F. Q. Bunch, Secretary.

MIDWESTERN
Beekeepers' Association
Kansas City, Missouri
November 8, 1959

The Midwestern Beekeepers' Association will hold its regular monthly meeting in the I.O.O.F. Hall, 812 Westport Road, Kansas City, Mo., at 2:30 P.M., Sunday, Nov. 8, 1959. On the agenda will be a discussion of current operations in the apiary and colored slides of our summer activities. Refreshments. Everyone welcome.—Carroll L. Barrett.

IOWA
Beekeepers' Association
November 13 and 14
Ames, Iowa

The tentative dates for the Iowa Beekeepers' Association fall meetings are November 13 and 14, at the Memorial Union at Iowa State University at Ames. A well-rounded program is being planned so try to be on hand to make it a good meeting. A banquet will be held the evening of the 13th which you willl want to attend. A marketing meeting will also be held in conjunction with the regular meeting the evening of the 12th with Mrs. Carl Soder, marketing chairman presiding. —Glen L. Stanley, Secretary.

EMPIRE STATE
Honey Producers' Association
Syracuse, N. Y.
December 4 and 5

The annual two-day winter meeting of the Empire State Honey Producers' Association will be held December 4 and 5 at the Onondaga Hotel, Syracuse, New York.

Dr. Jarvis has been invited to speak on the Usefulness of Honey. A citation will be given to him for his book, Folk Medicine. Mr. James Hambleton will be honored for his many years of service. An excellent program has been arranged, with a For and Against discussion of the proposed Honey Marketing Order. All are invited to attend. —Mary Cary Trippe, Sec.-Treas.

SOUTHERN STATES
Beekeepers' Federation
Valdosta, Georgia
November, 9-10, 1959

The oldest beekeeping organization in the United States to hold annual conventions, The Southern States Beekeepers' Federation, will hold its 31st meeting at Valdosta, Georgia, on November 9-10. Leaders in southern beekeeping from Maryland to Texas are expected to attend the convention, the site of which will be the Ashley Oaks Motel on U.S. Highway 41, North.

The SSBF has no constitution, no by-laws, and no dues. All beekeepers who pay dues to a state organization are considered members, and all persons interested in beekeeping are invited to attend. Greatest emphasis has always been placed on good fellowship at SSBF meetings and beekeepers from all over the nation have attended this convention in the past in order that they may meet old friends and make new acquaintances.

Among those planning to address the convention are: Dr. Clayton L. Farrar, Head of the Bee Culture Section of the U.S. Department of Agriculture; Mrs. Harriett M. Grace, Director of The American Honey Institute; John Root, Managing Editor of Gleanings in Bee Culture; M. G. Dadant, Associate Editor of The American Bee Journal; R. B. Willson, of R. B. Willson, Inc.; and Mr. J. S. Miller, Editor of the Honey Marketing Report of the U.S. Department of Agriculture.

Registration for the convention will begin on Sunday evening, November 8. A "Dutch Dinner" for past presidents of the SSBF will be held at 8:00 p.m. Sunday. The annual banquet will occur on Monday evening at 7:30, and John Amos, Extension Entomologist of Virginia Polytechnic Institute will serve as toastmaster for this highlight of the convention.

An afternoon tea is being arranged for the benefit of the ladies and a special program will be held for beginners and hobbyists. Every effort is being made to insure that this Valdosta meeting will be up to the usual high standards of past SSBF conventions. Plan to attend this friendly beekeepers' get-together. Make your reservations now by writing the Ashley Oaks Motel, U.S. Highway 41, North, Valdosta, Georgia.

ALABAMA
Beekeepers' Association
Montgomery Alabama
December 4th and 5th

The Alabama Beekeepers' Meeting will be held in Montgomery, Alabama, December 4th and 5th at the Holiday Inn Motel. For Motel reservations please write the Holiday Inn Motel, Montgomery, Alabama.

The Alabama Beekeepers' Association is putting on a bee exhibit in Birmingham, Ala., at the State Fair, October 5-10, and Montgomery, Ala., October 12-17th.

MASSACHUSETTS
Middlesex County Beekeepers' Assoc.
November 28, 1959
Waltham, Massachusetts

The Middlesex County Beekeepers' Association will hold their November meeting the 28th at the Waltham Field Station at 6:30. A six months beginners' course has been prepared. The November meeting covers "Feeding and principles of wintering, ventilation, stores, population, activity of winter cluster, protection, and location" led by Dick Corrigan.

Douglas Brown won the Club Hive at the September meeting. Many other prizes were won including hive tools, jars, books, a glass top inner cover and Vitex trees. With over 70 present the use of the Interlooker was demonstrated. Dr. Weaver from Navasota, Texas spoke on Royal Jelly research in the U.S.A. and Mr. Richardson from Worcester spoke on the proper preparation of Honey for Exhibit and Sale.

Dr. Frank Shaw of the University of Massachusetts spoke on "Bee Poisoning" at our October Banquet meeting. —M. Southwick, Corres. Sec.

ILLINOIS
Beekeepers' Association
Springfield, Illinois
November 7-8

The Illinois Beekeepers' Association will meet November 7-8 at St. Nicholas Hotel in Springfield. A banquet will be held the first evening. A cordial invitation to all.

TRI-STATE
Oregon, Washington, and Idaho Assocs.
Walla Walla, Washington
December 3, 4, and 5

The Tri-State meeting of Oregon, Washington, and Idaho Associations will be held in the Marcus Whitman Hotel in Walla Walla, Washington, on December 3, 4, and 5, 1959, and arrangements have been made to have capable and well known speakers, including Mr. Lawrence Budge, President of the American Beekeeping Federation, Dr. J. E. Eckert of Davis, California, and Dr. C. L. Farrar of Madison, Wisconsin.

Attention: OREGON Beekeepers
Walla Walla, Washington
December 3, 4, and 5

Our state association will meet this year with Washington and Idaho beekeepers in a tri-state meeting. December 3, 4, and 5 in Walla Walla, Washington at the Marcus Whitman Hotel. Our host state has an excellent program planned, let's make it a "must". —Oliver W. Petty.

TEXAS
Beekeepers' Association
College Station, Texas
November 9 & 10

The Texas Beekeepers' Association will meet in the Student Memorial Center at College Station, November 9 and 10. The annual social "Buzz" will be held on Sunday evening November 8. Everyone is invited to attend.

(Continued on page 695)

Our Cover

WHAT A RELIEF to have the hives packed and ready for winter. Hives are facing the south and a fence on the north and west help to protect the bees from the cold winter blasts.

Obituaries

DR. ARNOLD P. STURTEVANT

DR. ARNOLD P. STURTEVANT, nationally known authority on bees and specialist on bee diseases, died September 17 at the age of 70 at the Ivinson Memorial Hospital in Laramie, Wyoming.

Dr. Sturtevant received the A.B. degree from Clark University in Worcester, Mass. in 1912, then did graduate work in the Massachusetts Institute of Technology from 1912-1914. He received a Ph.D. degree at George Washington University in 1923.

His background includes: bacteriologist in charge of tuberculin laboratory for H. K. Mulford Company in 1914-15; assistant in comparative pathology at Amherst, Mass. experimental station in 1915-16; in charge of bee disease investigations with the Bureau of Entomology for the Department of Agriculture in Laramie, Wyoming, 1916 to 1926, and head of the Bee Culture Laboratory in Laramie from 1926 to the end of May 1958, when he retired.

He spent more than 41 years in his field, of which 32 years were spent at Laramie.

He was a member of Wyoming chapter of Sigma XI, national science hon-

orary. Dr. Sturtevant was author and co-author of many published articles. (They are listed below.) He built an international reputation as an outstanding scientist and will be long remembered for his contribution to the beekeeping industry.

Dr. Sturtevant is survived by his wife, a daughter, and three grandchildren.

LIST OF HIS PUBLISHED ARTICLES (Chronological)

Sturtevant, A. P.

1919 June - A source of confusion in the diagnosis of **Nosema apis** in adult bees. Jour. Econ. Ent. XII; 3: 269.

1920 March - A study of the behavior of bees in colonies affected by European foulbrood. U.S.D.A. Bull. 804: 27 pp., illus.

1921 Feb. - Mixed infection in the brood diseases of bees. Jour. Econ. Ent. XIV; 1: 127-134.

1922 May - Brood disease variations. Explanation for some of the confusing symptons in the gross diagnosis of bee diseases. Glean. Bee Cult. L; 5: 298-302.

1923 Les maladies du couvain d'abeilles telles qu'on les connait aux Etats-Unis. Vie Congres International d'Apiculture, Marseille 1922, Compte-Rendu: 168-177.

Nelson, J. A., Sturtevant, A. P., and Lineburg, B.

1924 March - Growth and feeding of honeybee larvae. USDA Bull. 1222: 37 pp., illus.

Sturtevant, A. P.

1924 Apr. - The development of AFB in relation to the metabolism of its causative organism. Jour. Agric. Res. XXVIII; 2: 129-168, illus.

Phillips, E. F. and Sturtevant, A. P.

1924 Apr. - The diseases of adult bees in America. Bee World V; 11: 171-173.

Sturtevant, A. P.

1925 Apr. - The relation of **Bacillus alvei** to the confusing symptoms in EFB. Jour. Econ. Ent. XVIII; 2: 400-405.

1925 Diagnosing AFB and EFB and Sacbrood in the Apiary. 46th Annual Report of the Beekeepers' Assoc. of the Province of Ontario: 47-57.

1925 Methods of spread of AFB. Methods of eradication. 46th Annual Report of the Beekeepers' Assoc. of the Province of Ontario: 72-75.

1925 Drugs in the treatment of the brood diseases. VIIth International Congress of Beekeepers, Quebec, 1924, (Proceedings): 392-398.

1926 Mar. - The sterilization of AFB combs. USDA Circular 284: 28 pp.

1926 Oct.-Nov. - Bee diseases in the U.S. Glean. Bee Cult. LIV; 10: 648-653; 11: 713-716, illus.

1929 Aug.-Sept. - Foulbrood. American, European and Sac. New Zealand Smallholder, Vol. ?; No. ?: 631-632; No. ?: 687-689.

1930 Apr. - Preliminary report concerning factors related to certain of the growth phases of **Bacillus larvae**. Jour. Econ. Ent. XXIII; 2: 453-459.

1931 Honey production in Mountain States favored by local conditions. Yearbook of Agric. 1931: 303-305, illus.

1932 Sept. - Relation of commercial honey to the spread of AFB. Jour. Agric. Res. 45; 5: 257-285

1933 July - Package bees and AFB. Amer. Bee Journal LXXIII; 7: 259-261.

Sturtevant, A. P. and Farrar, C. L.

1935 June - Further observations on the flight range of the honeybee in relation to honey production. Jour. Econ. Ent. 28; 3: 585-589, illus.

Sturtevant, A. P.

1936 May - Quantative demonstration of the presence of spores of **Bacillus larvae** in honey contaminated by contact with AFB. Jour. Agric. Res. 52; 9: 697-704

Burnside, C. E., and Sturtevant, A. P.

1936 July - Diagnosing bee diseases in the apiary. USDA Circular 392: 34 pp., illus.

Holst, E. C. and Sturtevant, A. P.

1940 Nov. - Relation of proteolytic enzymes to phase of life cycle of **Bacillus larvae**, and two new culture media for this organism. Jour. Bact. 40; 5: 723-731.

Sturtevant, A. P., Knowlton, G. F., Hitchcock, J. D., Vansell, G. H., Holst, E. C., and Nye, W. P.

1941 Aug. - A report of investigations of the extent and causes of heavy losses of adult honeybees in Utah. USDA, Bur. Ent. and Pl. Quar. E-545: 18 pp.

Sturtevant, A. P.
1942 July - Variations in EFB. Glean. Bee Cult. 70; 7: 395.
1946 Diseases and enemies of the honeybee. In: Grout, Roy A. (Editor) The Hive and the Honeybee, Chapter XXV: 583-633. Dadant & Sons, Hamilton, Ill.
1946 Sept. - EFB probably not spore forming. Glean. Bee Cult. 74; 9: 482.
1949 Diseases and enemies of the honeybee. In: Grout, Roy A. (Editor) The Hive and the Honeybee. **Revised** edition, Chapt. XXIII: 573-631. Dadant & Sons, Hamilton, Ill.

Burnside, C. E., Sturtevant, A. P., and Holst, E. C.
1949 Jan. - Diagnosing bee diseases in the apiary. USDA Circ. 392 **revised**: 31 pp., illus.

Burnside, C. E. and Sturtevant, A. P.
1949 June - Differentiating characteristics in the diagnosing of brood diseases. Glean. Bee Cult. 77; 6: 386.

Sturtevant, A. P.
1949 Aug. - Studies on AFB resistance at Laramie, Wyo. Amer. Bee Jour. 89; 8: 385.
1950 Feb. - Obituary: C. E. Burnside, 1895-1949. Jour. Econ. Ent. 43; 1: 113.

Knowlton, G. F., Sturtevant, A. P., and Sorenson, C. J.
1950 Aug. - Adult honeybee losses in Utah as related to arsenic poisoning. Utah Agri. Exp. Sta., Bull. 340: 30 pp., illus.

Sturtevant, A. P. and Revell, I. L.
1953 Oct. - Reduction of **Bacillus larvae** spores in liquid food of honeybees by action of the honey stopper, and its relation to the development of AFB. Jour. Econ. Ent. 46; 5: 855-860.

White,, Jonathan W., Jr., and Sturtevant, A. P.
1954 Nov. - Sterilization of honey for bee feeding. Glean. Bee Cult. 82; 11: 658-661.

Sturtevant, A. P.
1957 Oct. - Behind the bee colony. Wyo. Roundup 5; 2: 12-13, illus

J. E. BUSH

MR. J. E. BUSH, prominent South Texas beekeeper from Floresville, Texas, dies. Throughout his life he was engaged in beekeeping. He gave much study and effort to the industry and was very successful in his beekeeping endeavor. Earl Bush was a quiet, unassuming man, and his many kind deeds and friendliness won him a host of lasting friends who will greatly mourn his death.

LEE GILLILAND

SOUTH Texas beekeepers will mourn the passing of Lee Gilliland, well known San Antonio beekeeper. He was a member of the San Antonio Beekeepers' Association and the South Texas Beekeeping Hobbyists. As a successful semi-commercial beekeeper and an excellent fisherman, he will be missed by his many friends.

NEWS AND EVENTS

(Continued from 692)

GEORGIA
Beekeepers' Association
Hahira, Georgia
November 30, 1959

The Georgia Beekeepers' Association will meet in Hahira, Georgia at the Hahira American Legion Home on Monday, November 30.

Registration will begin at 8:00 a.m. The meeting will be called to order at 9:00. The theme of this year's meeting will be "Publicizing Honey, Nationally and Locally." Particular emphasis will be placed on the importance of the Check-Off Plan and the ramifications of the proposed Marketing Agreement.

There will be a banquet at the American Legion Home on Monday night, free to all who attend the association meeting. All persons interested in beekeeping are invited to attend this meeting.—Garnett Puett, President.

Requeening Pays Off

There are still many beekeepers who believe that because a queen produces well one season, she will again. There can be nothing further from the truth. Second season queens are more likely to supersede right at the time you need them than a young laying queen. To avoid swarming, do-nothing hives, and winter loss due to queenlessness, requeen regularly with young laying queens. Return mail shipments summer and fall.

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THE GENERAL SECRETARY
Box 19 Foxton, New Zealand

Asked & An

Placing Bees in the Cellar

Q. When is the best time to put bees in the cellar for winter?

A. The best time to put them in is just after they have had a good cleansing flight in late fall. As a rule, the bees are not anxious for a cleansing flight early in November and are not tempted out in great numbers by suitable weather; but after they have been confined to their hives a couple of weeks they will fly in great numbers on the first fine day, probably nearly every bee going out at some time during the day. If the next day is cold, this is the time to put them in, even if it should be before the middle of the month. As a rule they should not be left out later than November 20.

Wintering Bees in a Closed Building

Q. Can bees be wintered successfully in a barn or closed building?

A. It would not be advisable to put the bees into the barn. They would fly out on warm days and be greatly confused on account of the change in their location so that many would be lost. Placing them in the barn would also deprive them of the benefits of the sunshine. By leaving the hives out where they are, the sun will warm them up on fair days during the winter. It will be much better to pack the bees where they now stand, even if it is late for this. If you do not pack them, they will be better off as they are than if you move them into the barn.

Deep Space Below Frames

Q. Does a deep space between the floor and the bottom bars of the frame cause the bees to lose time during the storing season by having to climb up the sides of the hive or will it be advantageous in diverting the storing bees from the brood nest?

A. Probably no time is lost by field bees entering the hive because of the deep space. Strong colonies having many bees too young to work in the field often have a cluster of bees reaching from the bottom bars of the frames to the floor of the hive. It is not unusual to see returning field bees fly into a large entrance and alight directly on this cluster of bees. In many cases the bees build little ladders of wax and propolis from the floor of the

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hive, which enable them to climb directly to the combs above. There is no conclusive evidence that the deep space is advantageous in diverting the storing bees from the brood nest. The chief advantage of this deep space is better ventilation, together with increased room for idle bees, thus relieving the congestion of the brood nest.

Foundation with Drone Size Cells

Q. It has occurred to me that it would be more practical to use foundation having drone size cells instead of worker size in the production of comb honey. Bees have a natural tendency to build drone comb, so why not compromise with them? It would also seem that less wax would be required for each section of honey because of the larger cell. Has this ever been tried?

A. Drone comb foundation was used rather extensively in an experimental way in comb honey production something like 25 or 30 years ago. At that time drone comb foundation was listed in catalogs of beekeepers' supplies; but it is no longer listed, and but little is made at this time.

A serious objection to drone comb foundation in sections is that the queen is often attracted to the supers by the drone comb, especially when full sheets of worker foundation are used in the brood chamber, resulting in almost no drone size cells there. This would make it necessary to use a queen excluder when producing comb honey on drone comb foundation which is not necessary when full sheets of foundation of worker size are used in the section. Another objection raised by some is the peculiar appearance of the cappings over the drone size cells. The finished section has a rather rough appearance compared with sections of honey built out on worker foundation.

Honey for Infant Feeding

Q. Is honey suitable for infant feeding?

A. The American Honey Institute reports that honey is recognized as a satisfactory supplement to milk in infant feeding. However, it is advisable to consult with your physician so that he can recommend the proper formula. Since honey is a very palatable and digestive product, it certainly is an excellent carbohydrate for use in infant feeding.

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. . . no more queens
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TUPELO, wild flower in 60's. Honey candy. LANCASTER COUNTY DUTCH GOLD APIARIES, 910 State Street, LANCASTER, PA.

HONEY—In any size container, also Mail Order Dealer for Bee Supplies. Write for prices. L. E. ALLEN, TIPTON, MICH.

EXTRACTED CLOVER HONEY — Extra fine quality. EARL ALEXANDER, RR 2, RICHMOND, IND.

SECTION COMB HONEY, extra fine white clover. WAHLS APIARIES, CHENOA, ILLINOIS.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. DEER CREEK HONEY FARMS, LONDON, OHIO.

CASH FOR BEESWAX. Write as to quantity and we will quote price. MUENCH-KREUZER CANDLE CO., INC., SYRACUSE, N. Y.

WANTED—White extracted or comb honey. Send sample. MILLERSPORT HONEY CO., MILLERSPORT, OHIO.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. THE A. I. ROOT COMPANY, MEDINA, OHIO; COUNCIL BLUFFS, IOWA; SAN ANTONIO, TEXAS.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. WALTER T. KELLEY CO., CLARKSON, KY.

WANTED — Light amber clover, fall flowers, buckwheat and white clover. Send sample and lowest price. CLOVERDALE HONEY CO., FREDONIA, N. Y.

WANTED—Buckwheat and light amber honey. EASTERN FOOD PRODUCTS, 421 BEDFORD AVE., BROOKLYN, N. Y.

WANTED, chunk comb and extracted honey. Mail sample and price. STOLLER HONEY FARMS, LATTY, OHIO.

WANTED—Honey in 60 pound cans, also beeswax any quantity. L. E. ALLEN, TIPTON, MICH.

HONEY WANTED for bottling, bakers including buckwheat. All types, in tins or drums, trailer loads. Send samples representing each lot. ALSO ROYAL JELLY. Write CHAS. E. FARRIS CO., 99 HUDSON ST., N. Y. City. Established since 1910.

We render cappings, old combs and buy your beeswax. Shipping tags sent on request.—M. R. CARY CORP., 219 WASHINGTON SQUARE, SYRACUSE 8, N. Y.

WANTED: Honey—water-white, light amber and buckwheat extracted and comb. Send samples and prices. M. R. CARY CORP., 219 Washington Square, SYRACUSE 8, NEW YORK.

WANTED—comb, chunk, and extracted honey. Send sample and price. RONALD CULP, CIRCLEVILLE, OHIO.

WANTED—All grades extracted and comb honey. WILLIAM MARCH, R.D. 3, Box 27, MANTUA, OHIO.

COMB HONEY—One truck load chunk comb and section honey. Must be white. Also white extracted honey. LOSE BROTHERS, 206 E. JEFFERSON ST., LOUISVILLE, KY.

ALL GRADES extracted honey wanted in both 60 pound cans and 600 pound drums. PRAIRIE VIEW HONEY CO., 12303 12th St., DETROIT 6, MICHIGAN.

FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. HUBBARD APIARIES, Manufacturers of Beekeepers' Supplies and Comb Foundation, ONSTED, MICHIGAN.

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We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

CARNIOLAN and CAUCASIAN Bees for 1960. Booking queens. Each, $1.00; 2-pound bees with queen, $4.00. 3-pound bees with queen, $5.00. LEWIS & TILLERY BEE CO., RT. 3, BOX 251, DU 2-8371, GREENVILLE, ALABAMA.

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HONEY PLANTS our specialty. Catalog on request. PELLETT GARDENS, ATLANTIC, IOWA.

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ROYAL JELLY capsules (with added vitamins) 25 mg. box of 30, $2.15, 50 mg. box of 30, $3.50. New Pack (without vitamins) $7.50 per 100. Beauty Cream, 2 oz., $2.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth Street, DETROIT 6, MICH.

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12 pounds ROYAL JELLY at $10.00 per ounce. GARON BEE COMPANY, DONALDSONVILLE, LA.

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BEES REMOVED from house or tree or hive without touching either house or bees. Bees will then move honey into hive. Save property, honey, and bees with my method. Send $2.00 for details. Satisfaction guaranteed. GEORGE HAWKINS, RT. 1, LAWSON, MO.

SWARM CONTROL—Our Bee swarming has been most satisfactorily controlled since using "Baker's Swarm Manipulation." Yard averaged 270 lbs. (Testimonial: S. & H. Apiaries, Chicago, Illinois) For further details see Ad by BAKER'S APIARIES this issue.

NATURAL, ORGANIC, fine, imported, unusual foods and health products at discount prices. Catalog free. WANDA BIO PRODUCTS, Dept. B, 6531 Euclid, CLEVELAND 3, OHIO.

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
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"SWARMING STOPPED COLD"
95% Foolproof
No Gimmicks
No Gadgets
No Tricks
Bigger Crops - Better Beekeeping
Full Directions Price $1.00
BAKER'S APIARIES
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Write for Price List.
WAX WORKERS, INC.
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CANADA'S
National Monthly Magazine for Beekeepers
Canadian Bee Journal
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High Quality Italian Queens
by air mail
80¢ each 10 for $7.50
$70.00 per 100
Why not requeen now?
CARLUS T. HARPER
NEW BROCKTON, ALA.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

POSITION WANTED

FAMILY MAN 28, would like permanent position. Previous migratory experience before entering service. K. SHARLOW, HOMER, MICHIGAN.

HELP WANTED

MAN to manufacture Wired Bee Comb Foundation from 100% pure Beeswax. Modern house furnished on main road. HUBBARD APIARIES, ONSTED, MICH.

MAGAZINES

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Archiv fur Bienkunde, International journal for Bee Culture and beekeeping economics. Founded in the fall of 1918. Oldest economic bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Classic. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. BIENE-VERGLAG, GIELBELBACHSTR. 19, LINDAU (B) GERMANY.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, Box 189, San Angelo, Texas, the only ranch magazine published serving the Angora Goat Industry. Subscription $3.00. Sample copy 25c.

BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping. With Apicultural Abstracts it costs $5.50 per annum, or $6.00 including membership of the Bee Research Association. Apicultural Abstracts only $4.50 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 BARNETT WOOD LANE, ASHTEAD, SURREY, ENGLAND.

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BEE JOURNAL of INDIA, published monthly in English. Subs. Rs. 12/-or Sh. 17/6d (starting) or $2.75 per year per International M.O. Sample copy 2s, or 25 cents. Can be had from: The Bhupen Apiaries (Himalayas), Ramgarh, Dist. Nainital, U. P., India.

Italian Queens

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J. E. WING & SONS
47 Years Continuous Service
Italian Package Bees
and Queens
Our Specialty
Knights Landing, Calif.

A TALK TO BEEKEEPERS

(Continued from page 689)

nectar and consequently the bees went into winter quarters with poor, unripened stores. We had a steady cold winter when bees were kept in their hives over long periods. This caused an unusual winter loss of bees.

If bees have a chance to ripen aster honey properly they will winter quite well on it, at least that has been our experience.

Are Seasons Changing?

About 30 years ago in this area we wintered all of our colonies in single story brood chambers. It was necessary to feed thick sugar syrup after the cessation of brood rearing early in October. I do not recall seeing any great amount of goldenrod and aster in those days. Brood rearing was suspended early in October and we began feeding sugar syrup the first week in October and planned to have all of the sugar syrup feeding completed during that month.

At present (October 8) normal colonies in this area have at least three to five combs of brood, or perhaps I should say brood in that many combs.

At present we operate our bees in double brood chambers and it is possible that such populous colonies have more brood at this season of the year than single story brood chamber colonies would have.

It stands to reason that very populous colonies of bees will withstand the rigors of a severe winter much better than smaller colonies. When bees form a winter cluster as the weather gets cold the bees on the outer edge of the cluster may perish, at least, a few of them do. A real populous colony can lose a few bees and still go through the winter in good condition, whereas a less populous colony could hardly afford to lose many bees.

Those who have made a study of the winter cluster of bees are forced to conclude that it is a marvelous phenomenon. The bees on the inside of the cluster generate heat by muscular activity while the bees on the outer edge of the cluster form a rim approximately two or three inches in diameter and huddle close together in order to retain most of the heat generated by the bees on the inside.

"1960 California Caucasians"

Gentle and industrious Caucasian queens. Hastings strain used for breeders. Bred for greater honey production. Gentleness, highly prolific. No excessive propolis. Swarm control and color. Some package bees. 10% books your order — balance two weeks prior to shipment. Air Mail. Start about April 10th. We do not clip or mark.

1 to 24 ..... $1.50 25 to 99 ..... $1.35 100 & up $1.25

Write for package prices.

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QUEENS

ITALIANS or CAUCASIANS

LAST CHANCE for those good STOVER queens which you will need in those colonies next spring.

You will certainly see the difference in the way they winter and build up into good colonies.

PRICES

In lots of	
1 - 24	$1.00
25 - 499	.85
Tested Queens	2.00 each

Queens Postpaid—Airmailed—Clipped

No Extra Cost — 10¢ each extra for marking.

THE STOVER APIARIES Mayhew, Miss.

Light Italian

BEES & QUEENS

W. E. Plant

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A simple, painless examination, the "Pap smear", helps physicians detect cancers of the uterus **in time**. When discovered early and properly treated, this second most common cancer in women is nearly 100% curable.

Our film, "Time and Two Women" will show you how to guard yourself against uterine cancer. It has already saved many lives. To see it, call the office of the American Cancer Society nearest you, or write to "Cancer", c/o your local post office.

American Cancer Society

. . . "GULF BREEZE" . . .

PACKAGE BEES **ITALIAN QUEENS**

We invite correspondence on your 1960 package bee and queen needs. 1960 will mark our 50th year with the bees.

BESSONET BEE COMPANY Donaldsonville, La.

WE ARE NOW TAKING ORDERS FOR 1960
BE WISE---ORDER EARLY

Reg. U. S. Pat. Off.

Due to rising demand for our bees and queens, we have increased the number of our colonies by 25% to serve you better. For rush orders we have added a two-way radio system from our office to outyard trucks.

When ordering, specify 1st, 2nd and 3rd choice of shipping date.

GARON BEE COMPANY DONALDSONVILLE, LA.

PACKAGE BEES & QUEENS for 1960

Headed by High Producing Caucasian Queens or Dadant's Midnite Hybrid Queens.

Howard Weaver & Sons

Navasota, Texas

ITALIAN QUEENS

We can still supply young queens for those who need late queens.

Prices	
1 - 9	$1.00
10-49	.90
50 up	.80

THE WILBANKS APIARIES
Claxton, Georgia

QUEENS
from
NORTHERN CALIFORNIA

	Italians	Starlines
1-25	$1.10	$1.40
over 25	1.00	1.30

Available from spring to early fall.

GEO. E. SMITH & SON

PHONES:
Sherwood 2-3511 — Sherwood 2-3544
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QUALITY BRED ITALIAN QUEENS

All breeder queens selected from our Northern Apiaries for Hardiness and Honey production. All queens shipped Air Mail. No queens shipped out of Continental USA and Canada.

May queens	$1.25 each
June through Sept.	.75 each
Oct. and Nov.	1.00 each

Walter D. Leverette Apiaries
P. O. BOX 364 FORT PIERCE, FLA.

MEATS A LA HONEY

(Continued from page 677)

maining ingredients except the soup and water; mix well. Shape into balls about 1¾ inches in diameter. Put into a shallow baking pan. Combine soup and water; pour over the meat balls. Bake in a moderate oven, 350 degrees F. about 45 minutes. Serve immediately, accompanied by hot buttered rice or noodles and a green vegetable. Yield: 6 servings, 4 meat balls each.

Honey Glazed Canadian Bacon

One 4 pound ready-to-eat Canadian bacon, 12 orange slices, rind left on, 24 whole cloves, ⅔ cup cider, ⅓ cup honey, ½ cup brown sugar and 1 teaspoon dry mustard.

Place bacon in shallow baking pan and bake in a slow oven, 325 degrees F. for 45 minutes. Remove from the oven, garnish with orange slices, cut in halves and "tack" in place with the cloves. Blend the cider, honey, brown sugar and dry mustard. Pour over bacon, return to the oven and bake about 1 hour longer, basting frequently. Slice thinly to serve. Yield: 8 to 10 servings.

RESEARCH REVIEW

(Continued from page 669)

can be very interesting and at times very important. A misidentification can cost lives or dollars very easily. Colleges all over the nation are looking for young people with good high school science records to pursue studies along these lines.

Death from Cyanide:

THE BRITISH Bee Journal for September 5th reports the death of a beekeeper from cyanide. The man was trying to exterminate a wasp nest in a loft above a garage and spilled some of the material on his clothes. His clothes were wet and this helped to speed up the generation of the gas.

Cyanide is a very effective, widely used gas which is used to kill wax moths. Even though it is a deadly material it is available at any drug store. Those who use it cannot exercise too much caution.

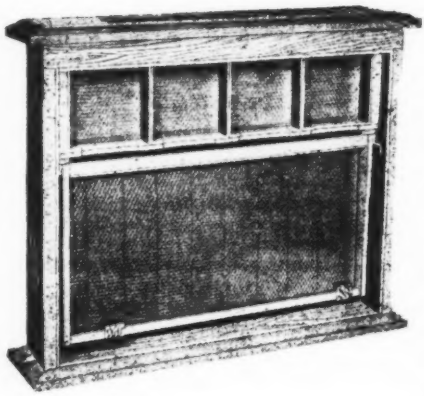
1959 is fast coming to a close. There have been many pleasures as well as disappointments.
One of our greatest pleasures was to serve our customers.
" Satisfaction Guaranteed " is our motto and aim. Any complaints? Tell US please.
A few queens may be available now, contact us if you need them.
WANTED — help for spring package season.

Rossman Apiaries
P.O. Box 133, Moultrie, Ga.

N O W
is a good time to requeen or make increase with high producing Carniolan or Caucasian queens.
Queens $1.45 each - airmail
Discount on Quantity
$2.50 each foreign.
Safe arrival in U. S. only.

W. D. REAMS
Box 458 **LaBelle, Fla.**

The Australasian Beekeeper
The senior beekeeping journal of the Southern hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd. Box 20, P. O., Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M. O. Australia and New Zealand 15/- per annum (in advance) post. paid. British Isles and British Dominions 18/- per annum (in advance) post. paid. Other overseas countries 20/- per annum (in advance) post. paid. Sample copy free on request.



One Picture Is Worth 1,000 Words

Do you have a big crop of honey and don't know what to do with it? Put an observation hive in one or several stores and watch your sales sky rocket. LET THE BEES DO THE TALKING.

Cat. No. 346 Shipped K. D. with nails and instructions, but without glass. Ship. Wt. 5 lbs.
Each $2.75

THE WALTER T. KELLEY CO., Clarkson, Ky.

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